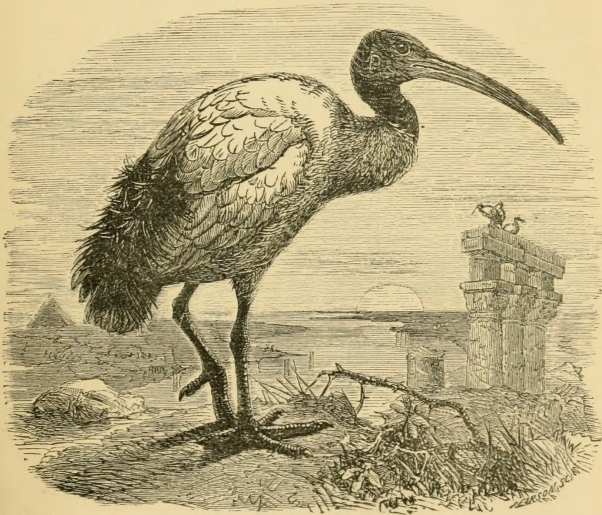




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THE IBIS,
A
QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY
PHILIP LUTLEY SCLATER, M.A., Ph.D., F.R.S.,
SECRETARY TO THE ZOOLOGICAL SOCIETY OF LONDON,
AND
HOWARD SAUNDERS, F.L.S., F.Z.S.



VOL. III. 1897.

SEVENTH SERIES.

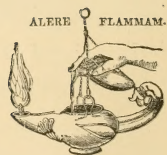
Non moriar, sed vivam, et narrabo opera Domini.

LONDON:

GURNEY AND JACKSON, 1 PATERNOSTER ROW.

(SUCCESSORS TO J. VAN VOORST.)

1897.



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RED LION COURT, FLEET STREET.

PREFACE.

ON bringing to a close the third volume of the Seventh Series of 'The Ibis,' the Editors again wish to offer their best thanks to the friends and correspondents who have favoured them with articles for the present year.

The contributions, it will be observed, are both varied and numerous, and have enabled the Editors to complete a volume which in size almost rivals that of 1891. The coloured illustrations have been slightly reduced in number, in view of the expenditure consequent upon the preparation and publication of the new General Index. This Index, which refers to the genera and species mentioned in the Fourth, Fifth, and Sixth Series of 'The Ibis,' and for the superintendence of which the best thanks of the Union are due to Mr. Osbert Salvin, F.R.S., was issued to the subscribers in April last.

As regards future prospects, the Editors are pleased

to say that they have a considerable number of communications in reserve ready for the first Number of the next volume, and that, looking to the activity which now prevails in every part of the ornithological world, they have no fears for the future.

P. L. S.

H. S.

London, October 1st, 1897.

BRITISH ORNITHOLOGISTS' UNION.

1897.

[An asterisk indicates an Original Member. It is particularly requested that Members will give notice to the Secretary of the Union, 10 Chandos Street, London, W., of any error in their addresses or descriptions in this List, in order that it may be immediately corrected.]

Date of
Election.

1896. ALEXANDER, BOYD ; Swifts Place, Cranbrook, Kent.
1893. ANNE, Major ERNEST L. S. ; 21 Victoria Square, Newcastle-on-Tyne.
1888. APLIN, OLIVER VERNON ; Bloxham, Banbury, Oxon.
1896. ARCHIBALD, CHARLES F. ; 9 Cardigan Road, Headingley, Leeds.
- 5 1897. ASTLEY, The Rev. HUBERT DELAVAL, F.Z.S. ; Chequers Court, Tring.
1885. BACKHOUSE, JAMES, F.Z.S. ; Daleside, Harrogate.
1892. BAKER, E. C. STUART ; District Superintendent of Police, Hafflong, North Cachar, Assam, India ; care of H. S. King & Co.
1889. BALSTON, RICHARD JAMES, F.Z.S. ; Springfield, Maidstone.
1890. BARCLAY, FRANCIS HUBERT ; Knott's Green, Leyton, Essex.
- 10 1872. BARCLAY, Colonel HANBURY, F.Z.S. ; Tingrith Manor, Woburn, Bedfordshire.
1885. BARCLAY, HUGH G. ; Colney Hall, Norwich.
1889. BARRETT-HAMILTON, GERALD E. H., F.Z.S. ; Kildare Street Club, Dublin, and Savoy Mansions, Savoy Street, Strand, W.C.
1881. BARRINGTON, RICHARD MANLIFFE, LL.B. ; Fassaroe, Bray, co. Wicklow.
1884. BEDDARD, FRANK E., M.A., F.R.S., F.Z.S., Prosector to the Zoological Society of London ; Zoological Gardens, Regent's Park, N.W.
- 15 1897. BENSON, JOHN ; Holly How, Coniston, Lancashire.
1897. BERRY, WILLIAM, B.A., LL.B. ; Tayfield, Newport, Fifeshire.
1880. BIDWELL, EDWARD ; 1 Trig Lane, Upper Thames Street, E.C.
1884. BINGHAM, Lt.-Col. CHARLES T. (Indian Staff Corps), F.Z.S. ; care of Messrs. H. S. King & Co., 85 Cornhill, E.C.

Date of
Election.

1892. BIRD, The Rev. MAURICE C. H., M.A.; Brunstead Rectory, Stalham, Norfolk.
- 20 1891. BLAAUW, F. E., C.M.Z.S.; Gooilust, s'Graveland, Noord-Holland.
1893. BLAGG, ERNEST W. H.; Greenhill, Cheadle, Staffordshire.
1896. BLAKENEY, ROBERT, R.E.; Aldershot Camp.
1873. BLANFORD, WILLIAM T., F.R.S., F.Z.S.; 72 Bedford Gardens, Kensington, W.
1897. BLIGH, The Hon. Ivo FRANCIS; Southfields Grange, Wandsworth, S.W., and Union Club, Trafalgar Square, W.C.
- 25 1893. BOLAM, GEORGE, F.Z.S.; Castlegate, Berwick-on-Tweed.
1897. BONAR, The Rev. HORATIUS NINIAN; Free Church Manse, Salton, Pencaitland, East Lothian, N.B.
1894. BONHOTE, JOHN LEWIS; 68 Loxham Gardens, Kensington, W.
1878. BORRER, WILLIAM, M.A., F.L.S.; Cowfold, Horsham.
1895. BRADFORD, Dr. J. ROSS, F.R.S.; 60 Wimpole Street, W.
- 30 1885. BROCKHOLES, WILLIAM F.; Claughton-on-Brock, Garstang, Lancashire.
1890. BROOKE, HARRY BRINSLEY; 33 Egerton Gardens, Kensington, W.
1892. BROOKS, W. EDWIN; Mount Forest, Ontario, Canada.
1897. BRYDEN, HENRY A.; Gore Park Road, Eastbourne.
1868. BUCKLEY, THOMAS EDWARD, B.A., F.Z.S.; Rossal, Inverness, N.B.
- 35 1895. BULGARIA, H.R.H. FERDINAND, Prince of; Sophia, Bulgaria.
1872. BULLER, Sir WALTER LAWRY, K.C.M.G., Sc.D., F.R.S., C.M.Z.S.; 122 Tinakori Road, Wellington, New Zealand.
1884. BUTLER, Lieut.-Col. E. A.; Brettenham Park, Ipswich, Suffolk.
1896. BUTTERFIELD, W. C. J. RUSKIN; 3 Stainsby Street, St. Leonards-on-Sea.
1884. BUXTON, GEOFFREY FOWELL; Sunny Hill, Thorpe, Norwich.
- 40 1895. BUXTON, S. GURNEY, F.Z.S.; Catton Hall, Norwich.
1896. CADE, FRANCIS J.; Teighmore, Cheltenham.
1889. CAMERON, EWEN SOMERLED, F.Z.S.; Terry, Montana, U.S.A.
1896. CAMERON, JAMES S.; 1st Bn. Royal Sussex Regt.
1888. CAMERON, JOHN DUNCAN; Low Wood, Bethersden, near Ashford, Kent.
- 45 1892. CAMPBELL, CHARLES WILLIAM, C.M.Z.S.; H.B.M. Chinese Consular Service; British Legation, Peking, China.

Date of
Election.

- * 1858. CAMPBELL-ORDE, Sir JOHN W. P., Bart., F.Z.S., late Captain
42nd (Royal Highland) Regiment; Kilmory House,
Lochgilphead, Argyllshire, N.B.
1888. CARTER, JAMES; Burton House, Masham, Yorkshire.
1890. CAVE, CHARLES JOHN PHILIP, F.Z.S.; Ditcham Park, Peters-
field.
1888. CHAMBERLAIN, WALTER, F.Z.S.; Harborne Hall, Harborne,
near Birmingham.
- 50 1894. CHANCE, A. MACOMB, Jun., B.A.; Lawnside, Edgbaston,
Birmingham.
1884. CHAPMAN, ABEL; 6 The Avenue, Sunderland.
1894. CHAPMAN, EDWARD HENRY; 17 St. Hilda's Terrace, Whitby.
1882. CHASE, ROBERT WILLIAM; Southville, Priory Road, Edgbas-
ton, Birmingham.
1897. CHOLMLEY, ALFRED JOHN, F.Z.S.; Place Newton, Rillington,
Yorkshire.
- 55 1889. CLARKE, STEPHENSON ROBERT, F.Z.S.; Borde Hill, Cuckfield,
Sussex.
1880. CLARKE, WILLIAM EAGLE, F.L.S.; Museum of Science and Art,
Edinburgh.
1895. COLES, RICHARD EDWARD; Oakfield, Milton, Lymington.
1880. COOPER, Lieut.-Col. E. H., F.Z.S.; 42 Portman Square, W.
1874. CORDEAUX, JOHN; Great Cotes House, R.S.O., Lincoln.
- 60 1888. CORDEAUX, Captain WILLIAM WILFRID; (21st Lancers), Cairo,
Egypt.
1882. CORY, CHARLES B., F.Z.S.; Third National Bank, State Street,
Boston, Mass., U.S.A.
1892. COURAGE, HAROLD MITCHELL; Snowdenham, Bramley, Guild-
ford.
1896. COWIE, Capt. ALEXANDER HUGH, R.E.; Stanhope Lines,
Aldershot.
1896. CRAWFORD, FRANCIS C.; 17 Royal Terrace, Edinburgh.
- 65 1894. CREWE, Sir VAUNCEY HARPUR, Bt.; Calke Abbey, Derbyshire.
1896. CROCKETT, SAMUEL RUTHERFORD; Bank House, Penicuik,
Midlothian.
1895. CROSSLEY, Sir SAVILE B., Bt., F.Z.S.; Somerleyton, Lowestoft,
and 12 Carlton-House Terrace, S.W.
1882. CROWLEY, PHILIP, F.Z.S.; Waddon House, Waddon, Croydon.
1877. DALGLEISH, JOHN J.; Brankston Grange, Bogside Station,
Stirling, N.B.

Date of
Election.

- 70 1896. DANFORD, BERTRAM W. Y., R.E.; St. Mary's Barracks, Chatham.
1874. DANFORD, CHARLES G., F.Z.S.; Hatszeg, Siebenbürgen, Hungary, and Conservative Club, St. James's Street, S.W.
1883. DAVIDSON, JAMES; Karwar, Kanara, Bombay, and 32 Drumsheugh Gardens, Edinburgh.
1891. DE VIS, C. W.; Queensland Museum, Brisbane, and care of B. Quaritch, 15 Piccadilly, W.
1893. DE WINTON, W. E.; Graftonbury, Hereford, and 59 Charlotte Street, Portland Place, W.
- 75 1896. DEGLI ODDI, Count Ch. ETTORE ARRIGONI, Società del Casino Pedrocchi, Padua, Italy.
1896. DOBBIE, JAMES B., F.Z.S., 2 Hailes Street, Edinburgh.
1889. DOBIE, WILLIAM HENRY, M.R.C.S.; 22 Upper Northgate Street, Chester.
1883. DOIG, SCROPE B.; Public Works Department, Bombay.
1895. DONOVAN, Surgeon-Capt. CHARLES, I.M.S., Civil Surgeon; Mangalore, South Canara, India.
- 80 1865. DRESSER, HENRY EELES, F.L.S., F.Z.S.; Topclyffe Grange, Farnborough, Beckenham, Kent, and 110 Cannon Street, E.C.
1896. DREWITT, Dr. FREDERICK D.; 2 Manchester Square, W.
1890. DRUMMOND-HAY, JAMES A. G. (Coldstream Guards); Guards' Club, Pall Mall, S.W.
1878. DURNFORD, W. ARTHUR, J.P.; Elsecar, Barnsley.
1896. DUTHIE, Lt.-Col. W. H. M.; Row, Doune, Perthshire.
- 85 1870. ELLIOT, DANIEL GIRAUD, F.R.S.E., F.Z.S.; Field Columbian Museum, Chicago, U.S.A.
1895. ELLIOT, EDMUND A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.
1884. ELLIOTT, ALGERNON, Civil & Sessions Judge, Amraoti Camp, Berar, H.A.D., India.
1866. ELVES, HENRY JOHN, F.Z.S.; Colesborne Park, Cheltenham.
1895. ERLANGER, Freiherr CARLO VON; Nieder Ingelheim, Rhein Hessen, Germany.
- 90 1879. EVANS, ARTHUR HUMBLE, M.A., F.Z.S.; 9 Harvey Road, Cambridge.
1888. EVANS, WILLIAM, F.R.S.E.; 18A Morningside Park, Edinburgh.
1891. EVERETT, ALFRED HAST, C.M.Z.S.; Labuan, Borneo.

Date of
Election.

1892. FAIRBRIDGE, WILLIAM GEORGE; 133 Long Market Street,
Capetown, South Africa.
1895. FALCONER, JOHN J. M.; Magdalene College, Cambridge.
- 95 1894. FARQUHAR, Capt. ARTHUR M., R.N.; Granville Lodge, Aboyne,
N.B.
1873. FEILDEN, Col. HENRY WEMYSS, C.M.Z.S.; West House, Wells,
Norfolk, and Junior United Service Club, St. James's, S.W.
1897. FENWICK, EDWARD NICHOLAS FENWICK; Oxford and Cambridge
Club, Pall Mall, S.W.
1886. FERGUSON, Lieut. HAROLD STUART, Nair Brigade: Trevandrum,
Travancore.
1892. FINN, FRANK, B.A., F.Z.S.; Indian Museum, Calcutta.
- 100 1890. FISHER, LIONEL; Kandy, Ceylon.
1884. FORBES, HENRY OGG, LL.D., F.Z.S.; Free Public Museums,
Liverpool.
1880. FOSTER, WILLIAM; Braeside, The Heath, Weybridge.
1887. FOWLER, WILLIAM WARDE, M.A.; Lincoln College, Oxford.
1865. FOX, Rev. HENRY ELLIOTT, M.A.; Fairview, Kingston Hill,
Surrey.
- 105 1881. FREKE, PERCY EVANS; Step House, Borris, co. Carlow.
1895. FROHAWK, FREDERICK WILLIAM; 34 Widmore Road, Bromley,
Kent.
1881. GADOW, HANS, Ph.D., F.Z.S.; University Zoological Museum,
Cambridge.
1886. GAINSBOROUGH, CHARLES WILLIAM FRANCIS, Earl of; Coombe
Manor, Campden, Gloucestershire.
1885. GALLWEY, Sir RALPH PAYNE, Bart.; Thirkleby Park, Thirsk.
- 110 1892. GERRARD, JOHN; Government Inspector of Mines; Worsley,
Manchester.
1879. GIBSON, ERNEST; care of Thos. Gibson, Esq., 1 Eglinton Court,
Edinburgh.
- * 1858. GODMAN, FREDERICK DUCANE, F.R.S., F.Z.S.; 10 Chandos
Street, Cavendish Square, W.
- * 1858. GODMAN, PERCY SANDEN, B.A., C.M.Z.S.; Muntham,
Horsham.
1874. GODWIN-AUSTEN, Lieut.-Col. HENRY HAVERSHAM, F.R.S.,
F.Z.S.; Shalford Park, Guildford.
- 115 1884. GOODCHILD, JOHN G., F.Z.S.; Museum of Science and Art,
Edinburgh.
1895. GRABHAM, OXLEY, M.A.; 2 The Crescent, Blossom Street, York.

Date of
Election.

1890. GRANT, WILLIAM R. OGILVIE ; 26 Hereford Square, S.W.
 1885. GUILLEMARD, F. H. H., M.A., M.D., F.Z.S. ; Old Mill House,
 Trumpington, Cambridge.
 1876. GÜNTHER, ALBERT C. L. G., M.A., M.D., F.R.S., F.Z.S. ;
 2 Lichfield Road, Kew Gardens, S.W.
 120 1870. GURNEY, JOHN HENRY, F.Z.S. ; Keswick Hall, Norwich, and
 Athenæum Club, Pall Mall, S.W.
 1897. GURNEY, J. NIGEL ; Sprowston Hall, Norwich.
 1896. GURNEY, ROBERT ; Sprowston Hall, Norwich.
 1890. GWATKIN, JOSHUA REYNOLDS GASCOIGN ; Manor House,
 Potterne, Devizes.
 1891. HAIGH, GEORGE HENRY CATON ; Grainsby Hall, Great Grimsby,
 Lincolnshire.
 125 1887. HAINES, JOHN PLEYDELL WILTON ; The Lodge, Gloucester.
 1886. HAMILTON, EDWARD, M.D., F.L.S., F.Z.S. ; 16 Cromwell Place,
 S.W.
 1883. HARCOURT, LEWIS VERNON ; Malwood, Lyndhurst, Hants.
 1893. HARTERT, ERNST ; The Museum, Tring, Herts.
 1868. HARTING, JAMES EDMUND, F.L.S., F.Z.S. ; Linnean Society,
 Burlington House, Piccadilly, W.
 130 1896. HARTLAND, JOHN COLES ; c/o Messrs. Hunt & Co., P.O. Box 11,
 Yokohama, Japan.
 1893. HARTMANN, WILLIAM ; Tangley Mere, Chilworth, Surrey.
 1873. HARVIE-BROWN, JOHN A., F.Z.S. ; Dunipace House, Larbert,
 N.B.
 1887. HEBBERT, CHARLES T., F.Z.S. ; The Rhodrons, Hook, Kingston-
 on-Thames.
 1897. HEWETSON, HENRY BENDELACK, F.L.S., F.Z.S. ; 11 Hanover
 Square, Leeds.
 135 1895. HINXMAN, LIONEL W., B.A. ; Geological Survey of Scotland,
 Edinburgh.
 1884. HOLDSWORTH, CHARLES JAMES, J.P. ; Kendal, Westmorland.
 1877. HOLDSWORTH, EDMUND W. H., F.Z.S. ; South Town, Dart-
 mouth, Devon.
 1891. HOLLAND, ARTHUR H. ; Estancia Sta. Elena, Halsey, F. C. O.,
 Argentine Republic, and Holmhurst, Copse Hill, Wim-
 bledon, S.W.
 1888. HORSFIELD, HERBERT KNIGHT ; Ivy Lodge, Chapel Allerton,
 Leeds.
 140 1893. HOSE, CHARLES, F.Z.S. ; Baram, Sarawak, Borneo.

Date of
Election.

1895. HOWARD, HENRY ELIOT; Stone House, Kidderminster.
1881. HOWARD, ROBERT JAMES; Hawkhurst, Blackburn, Lancashire.
- * 1858. HUDLESTON, WILFRID HUDLESTON, M.A., F.R.S., F.Z.S.; 8 Stanhope Gardens, S.W.
1893. HUDSON, WILLIAM HENRY, C.M.Z.S.; Tower House, St. Luke's Road, Westbourne Park, W.
- 145 1869. HUME, ALLAN OCTAVIAN, C.B., C.S.I., F.Z.S.; The Chalet, Kingswood Road, Upper Norwood, S.E.
1890. HUNTER, HENRY CHARLES VICARS; Mawley Hall, Cleobury Mortimer, Salop.
1870. HYLTON, HEDWORTH HYLTON, Lord, F.Z.S.; Merstham House, Red Hill, Surrey.
1870. IRBY, Lieut.-Col. LEONARD HOWARD L., F.Z.S.; 14 Cornwall Terrace, Regent's Park, N.W.
1888. JACKSON, FREDERICK J., F.L.S., F.Z.S.; The Red House, Aldeburgh, Suffolk.
- 150 1892. JAMES, HENRY ASHWORTH; 11 Oxford Square, Hyde Park, W.
1896. JESSE, WILLIAM; La Martinière College, Lucknow, Oudh, India.
1889. JOHNSON, FREDERICK PONSONBY; Castlesteads, Brampton, Cumberland.
1891. JOHNSTON, Sir HARRY HAMILTON, K.C.B., F.Z.S.; H.B.M.'s Consul-General, Tunis, North Africa.
1880. KELHAM, Major HENRY ROBERT (1st Bn. Highland Light Infantry); Malta, and Roydon Lodge, Camberley, Surrey.
- 155 1894. KELSALL, HARRY JOSEPH, R.A.; Aden.
1897. KELSALL, The Rev. JOHN EDWARD, M.A.; East Boldre Vicarage, Southampton.
1882. KERMODE, PHILIP M. C.; Hillside, Ramsay, Isle of Man.
1891. KERR, J. GRAHAM; Christ's College, Cambridge.
1895. KINGSFORD, WILLIAM EDWARD; Ashdene, East Molesey, Surrey.
- 160 1882. KNUBLEY, Rev. EDW. PONSONBY, M.A.; Steeple Ashton Vicarage, Trowbridge.
1892. LAIDLAW, THOMAS GEDDES; Bank of Scotland, Morningside Branch, Edinburgh, and 8 Morningside Road, Edinburgh.
1884. LANGTON, HERBERT; 11 Marlborough Place, Brighton.
1881. LASCELLES, Hon. GERALD; Queen's House, Lyndhurst.
1892. LA TOUCHE, JOHN DAVID DIGUES DE; Chinese Imperial Maritime Customs, Foochow, China.

Date of
Election.

- 165 1892. LAWS, ARTHUR MOORE; Buluwayo Engineering and Wagon Works, Buluwayo, Matabeleland, South Africa.
1885. LAWSON, GEORGE, C.B.; 36 Craven Hill Gardens, Hyde Park, W.
1896. LEE, OSWIN A. J.; 58 Manor Place, Edinburgh.
1876. LEGGE, Col. WILLIAM VINCENT (late R.A.), F.Z.S.; Cullenswood House, St. Mary's, Tasmania.
1868. LE STRANGE, HAMON, F.Z.S.; Hunstanton Hall, King's Lynn, Norfolk.
- 170 1875. L'ESTRANGE, Col. PAGET WALTER, R.A.; Llwynbedw, Boncath, R.S.O., South Wales.
1893. LEWIS, FREDERICK; Assistant Conservator of Forests, c/o The Forest Department, Colombo, Ceylon.
1889. LEYLAND, CHRISTOPHER JOHN; Haggerston Castle, Beal, Northumberland.
1897. LILFORD, The Rt. Hon. JOHN, Lord, F.Z.S.; Lilford Hall, Oundle, Northants.
1874. LLOYD, Col. JOHN HAYES, F.Z.S.; 95 Adelaide Road, N.W.
- 175 1897. LODGE, GEORGE EDWARD, F.Z.S.; 5 Verulam Buildings, Gray's Inn, W.C.
1889. LOYD, Major ARTHUR PURVIS, F.Z.S. (late 21st Hussars); Harnham Cliff, Salisbury.
1896. LUBBOCK, PERCY; 26 Cadogan Gardens, S.W.
1877. LUMSDEN, JAMES, F.Z.S.; Arden House, Alexandria, N.B.
1896. LUTTMAN-JOHNSON, JAMES ARTHUR, M.A.; 101 Mount Street, W.
- 180 1897. McLEAN, JOHN CHAMBERS; Waikohu Station, Te Karaka, Gisborne, New Zealand.
1894. MACPHERSON, ARTHUR HOLTE; 51 Gloucester Terrace, Hyde Park, W.
1886. MACPHERSON, Rev. HUGH ALEXANDER, M.A.; Allonby Vicarage, Maryport, Cumberland.
1875. MALCOLM of Poltalloch, JOHN WINGFIELD, Lord, C.B., F.Z.S.; Poltalloch, Lochgilphead, Argyllshire, and 23 Great Cumberland Place, W.
1878. MARKS, HENRY STACY, R.A., F.Z.S.; 5 St. Edmund's Terrace, Regent's Park, N.W.
- 185 1894. MARSHALL, ARCHIBALD McLEAN; Crowhill, Innerwick, E. Lothian, and 29 Queen's Gate Gardens, S.W.
1894. MARSHALL, JAMES McLEAN; Crowhill, Innerwick, E. Lothian.
1897. MASON, Col. EDWARD SNOW; 20 Minster Yard, Lincoln.

Date of
Election.

1878. MATHEW, Rev. MURRAY A., M.A., F.L.S. ; Buckland Dinham,
Frome, Somersetshire.
1896. MAXWELL, Rt. Hon. Sir HERBERT E., Bt., M.P. ; 49 Lennox
Gardens, S.W.
- 190 1883. MEADE-WALDO, EDMUND GUSTAVUS BLOOMFIELD, F.Z.S. ;
Stonewall Park, Edenbridge, Kent.
1897. MEINERTZHAGEN, DANIEL ; Mottisfont Abbey, Romsey.
1886. MILLAIS, JOHN GUILLE, F.Z.S. ; Melwood, Horsham.
1879. MITCHELL, FREDERICK SHAW ; Clydeshowe, Edmonton, Alberta,
N.W.T., Canada.
1897. MITCHELL, WILLIAM ; 16 Grosvenor Street, W.
- 195 1892. MIVART, St. GEORGE, Ph.D., M.D., F.R.S. ; 77 Inverness
Terrace, W., and Oriental Club, Hanover Square, W.
1890. MONK, THOMAS JAMES ; St. Anne's, Lewes, Sussex.
1886. MUIRHEAD, GEORGE, F.Z.S. ; Mains of Haddo, Aberdeen.
1893. MULLENS, WILLIAM H., M.A., F.Z.S. ; 9 St. James's Place, S.W.
1892. MUNN, PHILIP WINCHESTER ; Laverstoke, Whitechurch, Hants.
- 200 1897. MUNT, HENRY ; 83 Kensington Gardens Square, W.
1885. NEALE, EDWARD ; 43 Charlotte Street, Portland Place, W.
1882. NELSON, THOMAS HUDSON ; Oxley Villa, Redcar, Yorkshire.
1895. NESHAM, ROBERT ; Utrecht House, Queen's Road, Clapham
Park, S.W.
1897. NEUMANN, OSCAR ; 10 Potsdamer Strasse, Berlin, W.
- 205 1872. NEWCOME, FRANCIS D'ARCY WILLIAM CLOUGH ; Feltwell Hall,
Brandon, Suffolk.
- * 1858. NEWTON, ALFRED, M.A., F.R.S., F.Z.S., Professor of Zoology
in the University of Cambridge ; Magdalene College, Cam-
bridge.
1886. NICHOLLS, HOWARD HILL JOHN, M.R.C.S. ; 1 Hardwick Road,
Eastbourne.
1876. NICHOLSON, FRANCIS, F.Z.S. ; 84 Major Street, Manchester,
and Heathside, Knutsford, Cheshire.
1895. NOBLE, HEATLEY ; Temple Combe, Henley-on-Thames.
- 210 1887. NORMAN, GEORGE CAMERON, F.Z.S. ; 68 Lombard Street E.C.,
and Bredon's Norton, Tewkesbury.
1882. OATES, EUGENE WILLIAM, F.Z.S. ; 1 Carlton Gardens, Broad-
way, Ealing, W.
1892. OGILVIE, FERGUS MENTEITH, M.A., F.Z.S. ; 5 Evelyn Mansions,
Carlisle Place, Victoria Street, S.W.
1889. OGLE, BERTRAM SAVILE ; Hill House, Steeple Aston, Oxford.

Date of
Election.

1883. PARKER, HENRY, C.E., F.Z.S., Irrigation Officer, P.W.D.; Kurunegala, Ceylon.
- 215 1880. PARKIN, THOMAS, M.A., F.Z.S.; Fairseat, High Wickham, Hastings.
1891. PATTERSON, ROBERT; Tilecote, Malone Park, Belfast.
1884. PATTERSON, R. LLOYD, F.L.S.; Croft House, Holywood, co. Down.
1894. PEARSON, CHARLES EDWARD; Chilwell House, near Nottingham.
1891. PEARSON, HENRY J.; Bramcote, Notts.
- 220 1891. PENROSE, FRANK, M.D.; 84 Wimpole Street, W.
1886. PHILLIPS, E. LORT, F.Z.S.; 79 Cadogan Square, S.W.
1888. PHILLIPS, GEORGE THORNE; Wokingham, Berkshire.
1893. PIGOTT, THOMAS DIGBY, C.B.; 5 Ovington Gardens, S.W.
1896. PIKE, ARNOLD, F.Z.S.; c/o Miss Pike, 65 Cadogan Place, S.W.
- 225 1893. PIKE, THOMAS MAYER, M.A.; care of Mr. Porter, 7 Prince's Street, Cavendish Square, W.
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- 230 1879. RAWSON, HERBERT EVELYN, F.Z.S.; Fallbarrow, Windermere.
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- 20 1896. WINGE, HERLUF; University Zoological Museum, Copenhagen.

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ERRATA.

- Page 162, line 8 from the bottom, for *Phalacrocorax brasiliensis* read
Phalacrocorax brasilianus.
Page 176, top line, for *C. brunneata* read *S. brunneata*.
Page 311, line 6 from the top, for *Tringi* read *Tringa*.
Page 313, line 6 from the top, for *Æmophorus* read *Æchmophorus*.
Page 475, bottom line, for Norfolk read Suffolk.
Page 521, line 9 from the bottom, for *Georhynchus* read *Georhychus*.
Page 535, line 5 from the top, for *Andropagus* read *Andropadus*.
Page 602, line 7 from the top, for *chinensis* read *sinensis*.



James M. Lifford

THE IBIS.

SEVENTH SERIES.

No. IX. JANUARY 1897.

I.—*An additional List of Birds obtained at Kalaw, Southern Shan States, during April and May, 1896.* By Major G. RIPPON, 7th Burma Infantry.

(Plate I.)

DURING my second visit to Kalaw this year I did a good deal of collecting, but succeeded in obtaining examples of only 34 species of birds in addition to those previously recorded ('Ibis,' 1896, p. 357), making a total of 109 in all. I have included in the present list only those birds which I or my man actually shot and identified. A few obtained last year I did not see again: for instance, *Pica rustica* and *Lioptila melanoleuca*; while, on the other hand, I obtained nearly all those entered in the previous list as "observed by Mr. Oates." As in my former paper, I have not recorded any species procured below 4000 feet above the sea-level.

Towards the end of May the number of young birds at Kalaw is very great. They were frequently brought in as new species by my collector. Among others, *Dicrurus cineraceus* breeds there; young birds just able to fly from tree to tree were brought to me. They were of a uniform dark ashy blue.

Mr. E. W. Oates has been kind enough to look over the specimens I brought down and to settle some cases of

doubtful identification for me. Some of the rarer birds I propose depositing in the British Museum. I was very fortunate in re-discovering *Actinodura ramsayi* and *Sitta magna* after an interval of 20 years, and in procuring the male of the latter for the first time.

1. POMATORHINUS IMBERBIS, Salvad.

2. PYCTORHIS SINENSIS (Gm.).

A point about this bird which does not appear to have been noticed is that three or four black bristles spring from the upper eyelids. In a freshly-killed bird they are very conspicuous.

3. ACTINODURA RAMSAYI (Wald.).

I obtained one specimen of this in 1895, but did not include it in my previous list, as I did not at first identify it, there being no mention in 'Fauna of British India, Birds' (vol. i. p. 202), of the ring of white feathers round the eye, very conspicuous in the freshly-killed bird. This specimen I unfortunately mislaid before I could show it to Mr. Oates in Mandalay. I shot another this year, and last year's bird has now turned up. I have found since that the ring round the eye is mentioned in 'Stray Feathers,' vols. iii. and xi., pp. 404 and 171 respectively. In the description in 'Stray Feathers' (vol. iii. p. 404) it is remarked on as "eyelids white;" but in vol. xi. p. 171, under *A. egertoni*, the conspicuous white eye-ring is mentioned.

The habits of this bird are very like those of *Lioptila castanoptera*; it hops rapidly from branch to branch, frequently uttering its call. The call of *L. castanoptera* is three notes in the minor in a descending scale, preceded by a flourish; that of *A. ramsayi* is the same without the flourish. *Lioptila gracilis*, which I found very common in 1892 above 3500 feet in the North Chin hills, on the road from No. 3 Stockade to Fort White, had a very similar call, but of five notes.

4. ZOSTEROPS AUREIVENTRIS, Hume.

It is hard to recognize some of the specimens obtained. Some of them have the green upper plumage of *Z. simplex*,



with a tail of 1·5 inch in length and a plentiful mixture of yellow in the lower plumage.

5. *ÆGITHINA TIPHIA* (Linn.).

One specimen.

6. *HEMIXUS TICKELLI* (Blyth).

7. *SITTA MAGNA*. (Plate I.)

Sitta magna, Wardlaw-Ramsay, P. Z. S. 1876, p. 677, pl. lxiii. (♀).

I obtained in the same place, but on different days, a male and female of this fine Nuthatch. The female only has been described, but I think that the very great general resemblance to the female of the bird that I ascertained to be a male by dissection is sufficient to identify it.

Description.—*Male*. A very broad streak on either side of the head from the nostrils to the shoulders, passing over the eye, black; the space between these streaks light bluish ashy, the feathers with black bases, the black bases showing through very conspicuously on the forehead and less so on the crown; back slaty blue; wings blackish, edged with slaty blue; middle tail-feathers slaty blue, the next two pairs black with a slaty-blue tip, the next two similar, but with a subterminal patch of white, the outermost pair the same, but with a band of white on the outer web; lores, sides of the head, a patch behind the ear-coverts, the chin and throat white, shading into slaty blue on the breast and lower parts; ear-coverts tinged with fulvous; thighs, vent, and under tail-coverts chestnut, the feathers of the last broadly tipped with white; under wing-coverts black, with a white patch at the base of the primaries visible only from below. Total length 7·2 inches; wing 4·6; tail 2·6.

Bill bluish, paler below; legs brown; irides dark brown.

It will be seen that the male resembles the female, differing chiefly in the greater purity and intensity of the colouring and in the slaty-blue colour of the lower parts.

8. *SITTA FRONTALIS*, Horsf.

Only one specimen, a female, obtained. More might have been shot, but I ordered the man who was shooting for me

not to shoot any more small Nuthatches, because he brought in so many *S. neglecta*, which was extremely common there.

9. *MEGALURUS PALUSTRIS*, Horsf.

10. *PERICROCOTUS FRATERCULUS*, Swinh.

The young Minivets were just obtaining their adult plumage, and adult birds of all the species were scarce. I got one curious specimen of *P. speciosus* with a great deal of red on one side and pure yellow on the other.

11. *CAMPOPHAGA MELANOPTERA* (Rüpp.).

12. *ORIOLOUS TRAILLI* (Vig.).

One specimen obtained. *O. tenuirostris* was the common Oriole and was very plentiful. It was one of the birds which, later on, I ordered my man not to shoot.

13. *ACRIDOTHERES TRISTIS* (Linn.).

Brought in by my collector. I did not myself see it.

14. *CYORNIS MELANOLEUCUS* (Hodgs.).

15. *CYORNIS UNICOLOR*, Blyth.

16. *CYORNIS RUBECULOIDES* (Vig.).

17. *CYORNIS TICKELLI*, Blyth.

All these Flycatchers appeared to be breeding or about to do so.

18. *CULICICAPA CEYLONENSIS* (Swains.).

Common.

19. *MERULA PROTOMELÆNA* (Cab.).

I obtained one female and one nearly full-grown young bird of this species. The tail-feathers are slightly mucronate.

20. *HIRUNDO STRIOLATA*, Temm.

21. *ANTHUS STRIOLATUS*, Blyth.

22. *ARACHNECHTHRA ASIATICA* (Lath.).

Common.

23. *PSARISOMUS DALHOUSIÆ* (Jameson).

24. *CHRYSOCOLAPTES GUTTICRISTATUS* (Tickell).

25. *MEROPS VIRIDIS*, Linn.

The first bird of this species seen by me at Kalaw I shot on the 22nd May. Two days later I saw about a dozen. I was then leaving.

26. *UPUPA INDICA*, Reich.

One specimen.

27. *CAPRIMULGUS MACRURUS*, Horsf.

Very common; it may be heard calling at any time during the night.

28. *HIEROCOCCYX SPARVERIOIDES* (Vig.).

29. *RHOPODYTES TRISTIS* (Less.).

30. *PALÆORNIS TORQUATUS* (Bodd.).

31. *PALÆORNIS FINSCHI*, Hume.

32. *MILVUS GOVINDA*, Sykes.

I saw one Vulture, but did not get a specimen of it.

33. *TURTUR TIGRINUS* (Temm. & Knip).

34. *PHASIANUS HUMILÆ*, Hume.

I obtained only one male and one female of this handsome Pheasant. The female was shot after a long run up the side of a hill. When first seen she was picking about in a small valley between two pine-clad slopes. The male was got more easily in a rocky valley with a good deal of undergrowth, chiefly bamboo. A man was sent round towards the head of the valley with orders to walk slowly down towards me. The Pheasant, which had been seen to go into a thick clump, presently walked out and was immediately shot. The skins of both were preserved.

II.—*On the new Palaearctic Goose Anser neglectus**. By P. SUSHKIN, Keeper of the Zoological Collection of the Imperial Society of Naturalists of Moscow.

(Plate II.)

AMONGST the skins of birds which I brought with me in 1891 from the government of Ufa there are nine specimens

* See Bull. B. O. C. 1895, v. p. vi.

of a Goose belonging to the group of *Anser segetum*. The whole series was obtained during the autumnal migration from the 4th to the 16th of October, eight specimens being killed by myself and the ninth by my assistant, from whom I received it immediately after it was procured, so that I had the good fortune to be able to examine the natural coloration both of the bill and feet of all the birds. Thus I found that but one specimen of the series was a true *A. segetum*, with the feet and the middle portion of the bill deep orange, these parts in the rest of the eight specimens being flesh-coloured, with more pronounced rosy in some of the more vigorous birds. Individual variations in the development of the pink middle portion of the bill there are in the new species just as in *A. segetum*, but as regards the coloration of plumage the eight specimens of the former are similar to each other.

The pink band round the median part of the beak and the pink flesh-colour of the feet gave me good reasons for comparing my specimens with *A. brachyrhynchus*, Baill.; and I am very much obliged to Mr. Pleske, Director of the Zoological Museum of the Academy in St. Petersburg, for kindly sending me two specimens of the latter (March, 1888, Pomerania, ♀ ad., and December 1894, island of Föhr, North Schleswig, ♂ jr.) for comparison. I found a series of *A. segetum* from different localities in the collection of Prof. M. Menzbier in Moscow, and I am therefore able to make a full comparison of my new Goose with its nearest allies. The results of this comparison are as follows:—

The new Goose is different both from *A. brachyrhynchus* and *A. segetum*, but is nearer to the latter in dimensions and coloration, having the following measurements of the parts:—Length 29"·4–33", expanse 60"–65"·6, wing 18"·5–19"·5, culmen 2"·46–2"·7, tarsus 2"·95–3"·1.

The extent of variation in the dimensions of *A. segetum* is the same; but *A. brachyrhynchus* is a much smaller bird, with an absolutely and relatively shorter bill (wing 16"–16"·5, culmen 1"·8, tarsus 2"·75–2"·8). The line of demarcation between the feathered front and bill in the new Goose

(as in *A. segetum*) is further backward than in *A. brachyrhynchus*. This is clear on comparison of the angle formed by the lines which go to the angle of the mouth from the top of the nail and from the hindermost point on the upper portion of the bill; this angle is obtuse both in the new species and in *A. segetum*, but acute in *A. brachyrhynchus*. The bill of the example of *A. segetum* obtained by me in the government of Ufa is very similar to the figure of the bill of "*A. segetum*, Naum.," given in 'Naumannia' for 1853 (p. 7). The eight specimens of the new Goose all have the bill slender, from the lesser development of the maxilla, and the more curved nail, the horny teeth being small. But some specimens of *A. segetum* have also the bill similarly developed, as may be seen on the figure of the bill of "*A. arvensis*, Brehm," in the same volume of 'Naumannia' (1853, p. 7, fig. B).

As regards coloration, the new Goose is far more distinct from *A. brachyrhynchus* than from *A. segetum*. Whilst *A. brachyrhynchus*, in the coloration of its upper parts, especially in that of the wings, is not unlike *A. cinereus*, having these parts very conspicuously tinged with bluish grey, our new bird is comparatively very dark. It seems to me that the most notable colour-difference both of the new Goose and of *A. segetum* from *A. brachyrhynchus* is as follows:—In the new Goose and in *A. segetum* the carpal upper coverts are dark bluish grey, and the greater upper coverts of the antibrachium dark brown, without any tinge of bluish, whereas in *A. brachyrhynchus* the anterior great upper coverts of the antibrachium and the carpal upper coverts are both of a clear bluish grey.

From *A. segetum* the new Goose differs in the much darker colour of the head and neck, especially of the hinder parts, and in the browner edges of the dark-coloured feathers of the upper parts and flanks. Some specimens have a very slight white mark at the base of the upper mandible.

From the above-mentioned characters I arrive at the conclusion that the Goose obtained by me in the government of Ufa is distinct both from *A. segetum* and *A. brachyrhynchus*,

and may be characterized as new to science with the following diagnosis:—

ANSER NEGLECTUS, mihi. (Plate II.)

Ab *A. brachyrhyncho* statura majore, rostro longiore et graciliore, secundariorum tectricibus atro-fuscis, tectricibus carpi discoloribus: ab *A. segetum* pedibus zonaque rostri incarnatis distinguendus.

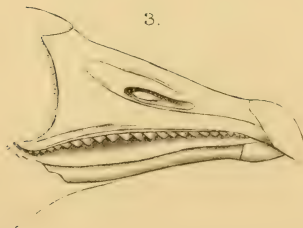
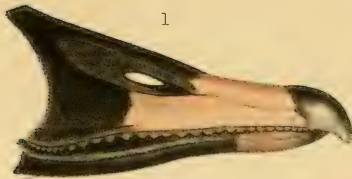
Hab. Ufa, Rossia orientalis.

The specimens of this Goose were all obtained in the government of Ufa, on Lake Thoungak. On migration this species visits the above-named district in very large flocks, and by means of binoculars it was easy to determine that *A. segetum* was very rare among the flocks of *A. neglectus*. The Tatars and Bashkirs are quite familiar with the form now described, but the true *A. segetum* with orange feet and bill is unknown to most of them. Unfortunately I cannot communicate any information on the breeding-localities of this new species. I am told by Mr. Nazarow that a Goose with pink feet and a pink band on the bill breeds in the northern parts of the district of Turgaisk, but I am not sure that this information has any relation to *A. neglectus*.

III.—*Field-Notes on the Birds of Chili.* By AMBROSE A. LANE.
With an Introduction and Remarks by P. L. SCLATER.

I. *Introductory Remarks.*

In the notice of the late Mr. H. B. James, contained in 'The Ibis' for 1893 (p. 164), it was mentioned that in 1889 James, who, along with me, had planned a work on Chilean birds to correspond with 'Argentine Ornithology,' sent out a collector to Chili in order to increase his series of the birds and eggs of that country. Acting under James's instructions, Mr. Ambrose A. Lane went first to Tarapacá, the new northern province of the Chilean Republic, and subsequently south to Arauco and Valdivia, but was unfortunately driven home by the outbreak of the revolution



before he had finished his work. The collections of birds made by Mr. Lane were transferred, after James's death, along with his other collections, to the British Museum. Mr. Lane's manuscripts and journals were entrusted by James to my care, but the heavy pressure of other work has, I regret to say, prevented my attention to them up to the present time. On looking through them I now find that a certain number of the field-notes on the birds that were observed and collected are of sufficient interest to warrant their publication, regard being had to the fact of the little information there is at present available on the life-history of the birds of Chili.

I will first give a short account of Mr. Lane's principal expeditions in Chili, in order to show exactly where he went.

II. *Excursions near Santiago.*

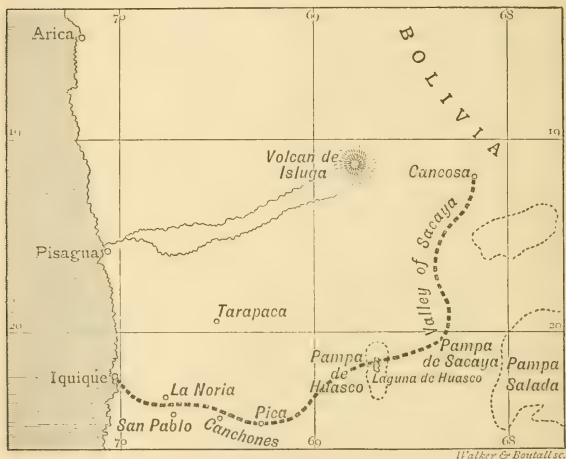
Mr. Lane arrived at Valparaiso on November 11th, 1889, and after a short stay at Santiago, and an excursion to the Hacienda Mansel, about three miles from the railway station of Hospital, during which a few birds were collected, returned to Santiago on December 1st. Another short excursion was then made to a country-house about eight hours' ride from Melipilla, in the province of Santiago, and about two hours from San Antonio, which is on the coast south of Valparaiso. The country here was mostly a wheat-growing district, and the birds were mostly similar to those of Hospital. On December 8th Mr. Lane returned to Hospital and stayed there collecting until the 19th, during which time he obtained nests and eggs of various small birds. The commonest birds noticed in these two places were *Mimus thenca*, *Diuca grisea*, *Hylactes megapodius*, and *Speotyto cunicularia*, all abundant in this district. On December 19th Mr. Lane returned to Santiago and thence to Valparaiso.

III. *Expedition to Tarapacá.*

Mr. Lane left Valparaiso on December 26th, 1889, and arrived at Iquique on the 31st. The country here consists,

as he states, of a series of hilly slopes, covered with loose soft sand and utterly devoid of vegetation. It contains little signs of animal life, with the exception of a few sea-birds and some Turkey-Vultures, which frequent the beach. Two

Fig. 1.



ROUTE OF MR. LANE IN TARAPACÁ.

days later Mr. Lane left Iquique for the Oficina of San Pablo, some thirty miles in the interior. The country on this journey was of the same character as that of the coast—completely sterile and destitute of animal and vegetable life. Almost the only birds met with were *Muscisaxicola rufivertex* and *Thinocorus orbignesi*. On January 15th Mr. Lane started for Pica, about 45 miles further off, and arrived there about noon next day, passing Canchones about half-way. Here some groves of trees are met with, but the rest of the way was entirely desert. At Pica Mr. Lane found a stretch of verdure about a mile and a half long, well planted with fruit-trees and evergreens. Here the Song-Sparrow (*Zono-*

trichia pileata), Doves (*Melopelia meloda*), and other small birds were met with in the gardens.

On January 17th Mr. Lane left Pica and rode 15 hours to the Pampa de Huasco, which is situated at a height of about 12,000 feet in the Andes. The laguna of Huasco was frequented by Flamingoes (*Phænicopterus andinus*), Gulls (*Larus serranus*), and other water-birds.

On January 21st Mr. Lane proceeded onwards to Sacaya. The valley of Sacaya is about 28 miles long, and where it widens the river forms stretches of swamps, sometimes a mile in width. Here Ducks and other water-birds were numerous. On January 27th Mr. Lane went on to Cancosa, about a day's ride northward, near the same river, but finding the locality unsuitable for his work, returned to Sacaya on January 30th. On the way back he made a deviation to an Indian homestead, where he purchased some young Rheas (*Rhea darwini*) (see P. Z. S. 1891, p. 137). After staying a few days at Sacaya, he returned to San Pablo on February 10th, and packed up his collections for transmission home.

At the end of February, 1890, having replenished his stores, Mr. Lane left San Pablo again and reached Sacaya on March 6th, where he obtained the use of an Indian house for headquarters. From Sacaya he made expeditions to Cancosa and to various other localities in the neighbourhood, and stayed on till the beginning of May, when he returned to San Pablo on the 9th of that month. Hence, after making a second short expedition to Pica, he returned to Valparaíso at the beginning of June.

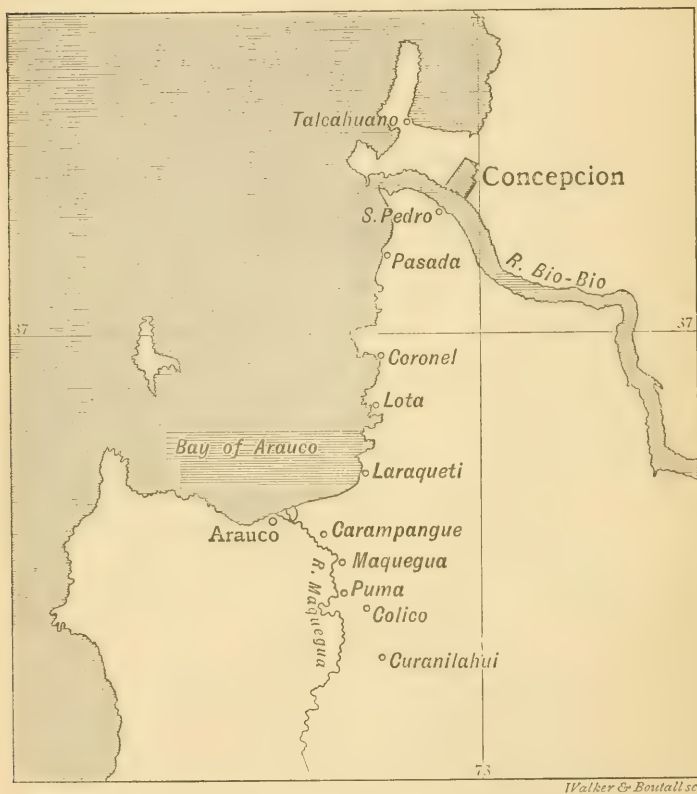
The birds obtained by Mr. Lane on this expedition were placed in my hands by James, and were described in a paper read before the Zoological Society on February 3rd, 1891*. The specimens were referred to 53 species, among which one—*Phrygilus coracinus*—was described as new.

* "On a second Collection of Birds from the Province of Tarapacá, Northern Chili." By P. L. Selater. P. Z. S. 1891, p. 131.

IV. *Expedition to Arauco and Valdivia.*

On June 27th, 1890, Mr. Lane arrived at Coronel, a port on the Chilian coast a little south of Concepcion. Here he

Fig. 2.

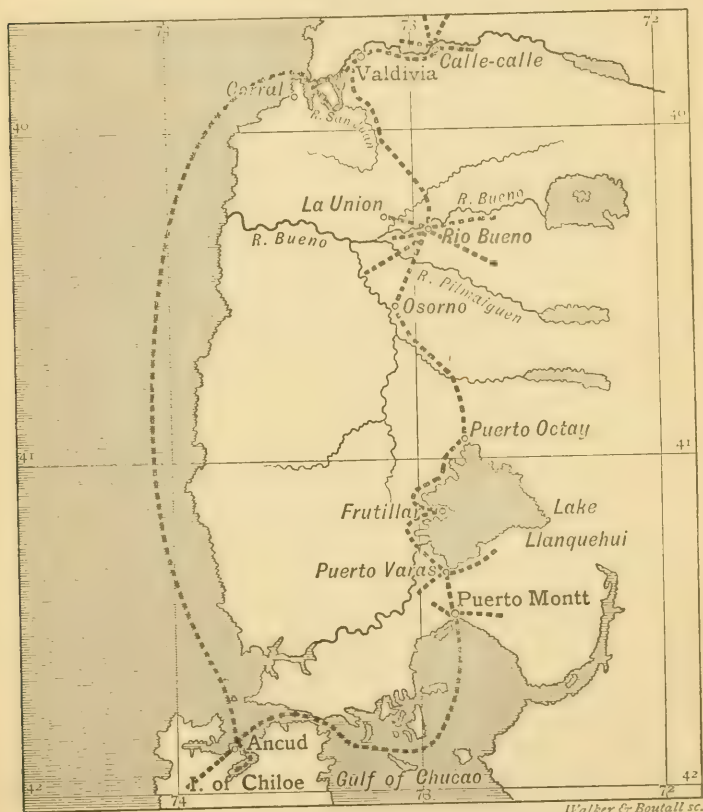


LOCALITIES OF MR. LANE IN ARAUCO.

found the hills covered with scrub and small birds plentiful, though in limited variety. On July 13th he went on to Maquegua, south of Coronel, and about ten miles inland, which he found to be just at the commencement of the great forest-district of Southern Chili. The country was very hilly and fairly wooded, and traversed by numerous ravines

(*'quebradas'*) choked with dense bush. From Maquegua Mr. Lane made expeditions all round, to Colico and Curanilahui inland, and to Arauco on the neighbouring coast. After a stay of about two months in this district and at Laraqueti on the coast, the winter being nearly over, he prepared to go on to Valdivia.

Fig. 3.



ROUTE OF MR. LANE IN VALDIVIA AND CHILOE.

On September 22nd, Mr. Lane, having left Coronel by steamer, arrived at Corral, a small port at the mouth of the Calle-calle river, whence it takes about two hours in a

steam-launch up to the town of Valdivia. The scenery here was remarkably picturesque, the country being hilly and thickly covered with evergreen woods, which extend to the water's edge. After a short stay at Valdivia, Mr. Lane proceeded to Calle-calle, about 30 miles up the river, where he remained a week, and, meeting with but little success in collecting, returned to Corral. The most noticeable bird about Calle-calle was the large Woodpecker, *Ipocrantor magellanicus*; but at Corral the beautiful bay and inland creeks yielded a plentiful supply of water-fowl. Sea-birds were also obtained outside the harbour, where he saw a good many Penguins (*Spheniscus humboldti*).

On November 11th Mr. Lane left Corral by steamer for Ancud, the port at the north end of the large island of Chiloe, but not finding many additional sea-birds there, went on by the next steamer to Puerto Montt, on the opposite mainland, where he arrived on November 20th. Hence an excursion was made to the inland lake called Laguna de Llanquihui, about 20 miles from the coast. Here he stayed first at Puerto Varas, a small place on the lake, and was much pleased with the German settlers, who were very hospitable and obliging. Not having great success at Puerto Varas, Mr. Lane went, on December 2nd, to another village on the Laguna called Frutillar, and subsequently to Puerto Octay, a small place on the north side of the lake. After a day's stay here he rode through the town of Osorno to Rio Bueno. The country between Puerto Octay and Osorno was mostly forest, and there appeared to be few birds except Parrots, which were plentiful. From Osorno to Rio Bueno the land was mostly cultivated with wheat. About two hours from Rio Bueno, where that stream is joined by the Pilmaiguen, was one of the best bird-resorts he had come upon. There were islands along both rivers frequented by Ducks, Herons, Storks, and other water-birds. Living was cheap and the people were hospitable, and Mr. Lane had planned to stay on here for a considerable period. Unfortunately, however, the revolution of 1891 broke out, the whole country became upset, and all civilians were forbidden

to carry firearms. Under these circumstances Mr. Lane thought it prudent to leave the country and return to Europe.

V. *Mr. Lane's Field-Notes.*

I now give a selection from Mr. Lane's field-notes made during these expeditions. The nomenclature and arrangement of James's 'New List of Chilian Birds' are followed, and references to the volumes of the Catalogue of Birds in the British Museum (B. M. C.) are added. The localities under each name in brackets are taken from Mr. Lane's specimens now in the British Museum.

1. *TACHYCINETA MEYENI* (Bp.).

Tachycineta meyeni, Sharpe, B. M. C. x. p. 116; James, N. L. p. 2; Sharpe & Wyatt, Mon. Swallows, i. p. 153, pl. 23.

(Corral and Maquegua.)

Common throughout Chili, and known as the "Golondrina." I believe it is found in Valdivia and Chiloe only in the warm season. I observed it in June at Coronel, but on going to Maquegua I found none at that date, though it became plentiful there at the end of August.

+ 2. *ATTICORA CYANOLEUCA* (Vieill.).

Atticora cyanoleuca, Sharpe, B. M. C. x. p. 186; James, N. L. p. 2; Sharpe & Wyatt, Mon. Swall. ii. p. 505, pl. 99.

(Sacaya.)

Birds of this species appeared to be generally distributed on the east side of Tarapacá. They were common at Huaseo, and I fancy those I saw at Pica were the same. They breed at Sacaya about November or December, making their nests in holes or crevices in cliffs.

3. *CONIROSTRUM CINEREUM* (d'Orb. et Lafr.).

Conirostrum cinereum, Selater, B. M. C. xi. p. 15; id. P. Z. S. 1891, p. 133.

(Pica.)

I collected the specimens sent of this species at Pica, in

Tarapacá, during the latter part of May, 1890, which was well into winter-time.

I was unable to find out any local name for this species, as the natives of Pica are far too indolent to take any interest in ornithology, but I heard of its occurrence in similar oases further north. I observed these birds in flocks feeding on the tops of trees, just like Titmice, especially on a sort of willow-tree. The sexes appear to resemble each other in markings and size. They are probably residents at Pica.

They appear to be purely insectivorous, feeding on minute insects like Paridæ. Their call-note is similar to that of most species of the latter; they were rather silent, however, when I saw them, merely calling to each other when scattered.

4. *XENOSPINGUS CONCOLOR* (d'Orb. et Lafr.).

Xenospingus concolor, Sharpe, B. M. C. xii. p. 799; Sci. P. Z. S. 1891, p. 133.

(Pica.)

Whilst collecting at Pica (province of Tarapacá) in May, 1890, it being then winter-time in that locality, I noticed these birds in the gardens, singly or in pairs. I was told by the natives they were "Canaritos"; but "Canarito" (which is a pet name for Canary in Spanish) is often applied indiscriminately to small birds.

This is a shy, retiring bird, flitting through the thick bushes, and occasionally uttering a peculiar and rather subdued chirruping.

5. *PHRYGILUS GAYI* (Eyd. et Gerv.).

Phrygilus gayi, Sharpe, B. M. C. xii. p. 781.

I did not observe these Finches until I went to the province of Arauco, north of which they do not occur on the lowlands; at least so I was told. They are more plentiful in the south, especially in Chiloe, and on the adjacent mainland. Their local name is "Chanchito" ("little pig").

They resemble *P. atriceps* very closely, and might be

mistaken for them by a casual observer. *P. atriceps* is somewhat larger, and its deep-black head distinguishes it, this part being in *P. gayi* of a dark slate-colour. Even their notes appear identical, though I heard the male of *P. gayi* utter a simple melody on a few occasions during summer, which performance I did not notice in the other species. In Southern Chili the present species feeds a good deal on the ground underneath bushes.

The favourite haunts of these birds are the sides of ravines or abrupt hollows, covered with thick bush of a seed-bearing nature, and small cliffs covered with creepers. They do not occur on open stretches, but are often numerous in partially-cleared localities, where coppice has taken the place of the large timber previously cut down or burnt. I never could find their nests. I frequently saw them in confinement, in aviaries. When crossing the Andes, from Santiago to Mendoza, I found this bird numerous on the Argentine side, where it feeds on the ground on the barren mountain-slopes.

6. *PHRYGILUS ATRICEPS* (d'Orb. et Lafr.).

Phrygilus atriceps, Sharpe, B. M. C. xii. p. 786; Selater, P. Z. S. 1891, p. 133.

(Sacaya and Huasco.)

Abundant about Sacaya, and fairly so about Huasco and other localities in Tarapacá. The adult male, when in full colour, is a very beautiful bird, and is perhaps slightly larger than the female. The iris is hazel. These birds frequent the low bushes which border the valley, and feed principally on the ground, where they pick up seeds of the bushes and mountain grasses. Their note of alarm is a *click*, which can be imitated by pressing the tongue against the palate and then withdrawing it; sometimes it has a double sound. They have other call-notes, but, so far as I could ascertain, nothing resembling a song.

I found them between 10,000 and 12,000 feet, and in Tarapacá only.

7. *PHRYGILUS UNICOLOR* (d'Orb. et Lafr.).

Phrygilus unicolor, Sharpe, B. M. C. xix. p. 792.

I only observed this species at Huasco about the rocky slopes bordering the laguna on the west. They are known as the *pajaro plomo* (leaden or lead-coloured bird), on account of their colour. I was informed by a native that they are resident at this locality. The sexes appear alike. Their only note seemed to be a subdued chirrup; they searched for food on the ground, and hopped familiarly about the ruins of an Indian homestead, where we camped.

8. *PHRYGILUS ALAUDINUS* (Kittl.).

Phrygilus alaudinus, Sharpe, B. M. C. xii. p. 793.

(Vina del Mar and Coronel.)

Owing to my somewhat limited sojourns in Central Chili, I only came on this species occasionally, and have no information of any account about it. It appears to occur near the sea-shore, on rather bare hill-slopes, and such localities all through the central provinces. I got one specimen near Coronel (province of Arauco) in the winter-time (about June), 1890, and subsequently found none, and I did not hear of them occurring further south.

9. *PHRYGILUS CORACINUS*, Scl.

Phrygilus coracinus, Sclater, P. Z. S. 1891, p. 133, pl. xiii.; James, New List, p. 2.

(Near Sacaya.)

The specimens sent home were obtained at an estancia about eight leagues to the east of the valley of Sacaya on the 20th March, 1890. I had no opportunity of observing the habits of these birds, but concluded that they were migrants or occasional visitors, as the natives did not seem to know them.

10. *DIUCA GRISEA* (Less.).

Diuca diuca, Sharpe, B. M. C. xii. p. 800.

(Hacienda Mansel and Coronel.)

This bird competes with the Pilcated Song-Sparrow for being the most abundant species in Chili, and in the central

and southern provinces fairly beats it. It is a resident, I think, everywhere.

I do not exactly know its northern limit, but, so far as I could ascertain, it stretches up to the commencement of the desert portion of Chili, occurring up to the base of the Andes as far as cultivation extends. In the south it is equally numerous, occurring all through Chiloe, and probably in the southern archipelagos and on the mainland to the Straits, at least as far as cultivation is carried on, for it does not appear to find sustenance in the natural forest. It is not so plentiful on the coast as further inland.

It is called by the Chilians "Diuca."

The sexes are of about the same size, and alike, though as a rule the female is not quite so handsome as the male. They prefer civilization, and are invariably found about homesteads or tillage. In the cold season they may often be seen feeding on the ground in large flocks; they separate on being disturbed. They feed on various seeds, especially grass seeds, also berries, &c. About Santiago they nest from the end of September to Christmas, varying further south according to climate. At Valdivia the season is five or six weeks later than as stated above. As soon as the time of year comes on they display a good deal of energy, and, like most Finches, are very active in their nesting operations, and vociferous as well. The nest is sometimes completed in three days or less, according to circumstances, and if the birds are not unsettled or disturbed.

The nest is placed from 3 to 8 feet from the ground, and as a rule well concealed in a thick bush or branch.

The eggs are laid to the number of three, being usually completed within two days from the laying of the first egg.

I found some nests with four eggs, but this is unusual, and sometimes I found birds sitting on two or even one egg.

Incubation lasts two and a half weeks or more, both birds assisting.

The young are fed in the usual Fringilline manner, on the pulp from the crops of the parent birds. They attain their full size in about a month.

The young are browner than the old birds on leaving the nest, which colour they retain for some time, especially the females.

The usual chirrup of the cock is like that of our House-Sparrow, but he outdoes the latter in attaining to a song in the summer. The song consists of a succession of loud clear notes, rather uneven in harmony and abrupt; but though it cannot be classed with the performances of other Finches, still it is constantly uttered in a cheerfully boisterous manner, which does a great deal towards enlivening some Chilean localities, where the singing birds are few. This bird is easily kept in cages, and ought to breed regularly in an aviary.

11. ZONOTRICHIA PILEATA (Bodd.).

Zonotrichia pileata, Sharpe, B. M. C. xii. p. 610; Selater, P. Z. S. 1891, p. 133.

(Tarapacá and Arauco.)

This familiar species appears to have an extremely wide range. In the province of Tarapacá I found it plentiful at Pica and Canchones, and heard that it occurred at similar oases a little further north. In the central provinces it is abundant everywhere, especially on the coast, and I found it equally numerous all through the south as far as I went.

When going from Valparaiso to Buenos Ayres, I met with it on both sides of the Andes to a considerable height (on the Chilean side past Mendoza, and on the other at Puente de la Vaca), at least where stations occur, as it prefers the vicinity of human dwellings. I subsequently found it plentiful about Buenos Ayres. Its general name all through Chili is "Chincol," often expressed in the diminutive, "Chincolita," and sometimes in southern provinces pronounced "Chingol." The sexes are similar.

On the central coast this is the commonest species observed, but inland the Diuca Finch is still more numerous. The Chincol is a very homely bird, and will be seen hopping about the door of the finest dwelling-house as well as the

humble abode of the peon. They do not penetrate the forests in the south, but occupy all gardens and cultivated fields. They feed as a rule on the ground, like Sparrows, and consume similar food.

Their nesting is somewhat curious, as they frequently build on the ground, though as a rule they nest in bushes at a height of from 2 to 6 feet.

In Central Chili they nest from the beginning of October to the end of November, and about Valdivia during November and December. At Rio Bueno they continued nesting till February. I fancy they generally bring out two clutches. The average clutch consists of three eggs. I found a nest in Central Chili close to the margin of a lake; it was placed at the butt of a thistle and concealed by one of the leaves. I thought at first it was that of some other species until I identified the bird. I subsequently found a similar nest on the ground, and was told that they are frequently met with.

Incubation, I think, lasts about sixteen days after the last egg is laid. The birds commence to sing very early in the season, and cease when the breeding period draws to a close.

I think their song one of the most pleasing of all that I heard in Chili, and it is most perfectly appreciated when heard, as I heard it on approaching Pica, for the first time, after riding for a long day through the barren desert, destitute of all traces of life.

Whilst first in Chili (at Hospital) I often heard a Clincol suddenly burst out in a cheerful song on a dark night, when all else was still. The usual call-note is a very characteristic chirp. I noticed during the breeding-season the birds have another chirp or cheeping sound, which is also used as a note of alarm.

12. CHRYSOMITRIS BARBATA (Mol.).

Chrysomitris barbata, Sharpe, B. M. C. xii. p. 216.

(Corral, Coronel, Calle-calle, and Maquegua.)

This species is one of the most popular and familiar small birds throughout Chili. It is very numerous in the southern provinces, and from its beauty, docility, and singing capa-

bilities is kept by many people as a cage-bird. It is known everywhere as the "Jilguero," pronounced "Silguero" in the southern provinces.

These birds closely resemble the common Siskin in general appearance and colouring, as also in habits. I did not observe them in the central provinces, but was told they occur as winter visitants. I found them very numerous in Arauco, and also about Valdivia; but south of the latter district I did not observe so many, though a certain number occurred as far south as I went, and on Chiloe. They bred at Rio Bueno about November, somewhat earlier than other small species there.

I was not fortunate in getting any eggs of this bird, but found a new nest, which was placed in a thick shrub on the margin of the forest about 3 feet above the ground.

A boy brought me a young one in full feather; it was somewhat like a female, but less distinctly marked.

These birds are easily captured at certain seasons by means of trap-cages. I had specimens alive at various times, but they usually escaped or got injured, so I had none to bring home.

In winter-time in Arauco I frequently saw them feeding on the topmost twigs of low forest trees, just like a flock of Siskins do here on the alder. They commence to sing at Maquegua (Arauco) about the beginning of August, and sing a good deal through the summer. Their song is very pleasing and much esteemed. Their call-note is the double whistle of the Siskin. They prefer wooded districts, are not found in very open localities, and appear capable of finding subsistence in the forest for a large portion of the year, if not altogether.

13. *CHRYSOMITRIS ATRATA* (d'Orb. et Lafr.).

Chrysomitris atrata, Sharpe, B. M. C. xii. p. 212; Selater, P. Z. S. 1891, p. 134.

(Sacaya.)

I first saw these birds at Huasco, in Tarapacá, in January, 1890, and subsequently at Sacaya.

They did not appear to be stationary for any length of

time, but frequented stretches of the low bush, in large scattered flocks, and I saw none after February, and concluded they had migrated.

I have found a note, made at the time, of having got some which were apparently young birds in immature plumage, from which it would appear that they breed in those Andean localities, and migrate before the cold season. The only note I observed them utter was an insignificant twitter when flitting from bush to bush. I did not see any at altitudes above 10,500 feet.

14. *PSEUDOCHLORIS UROPYGIALIS* (Sclater).

Pseudochloris uropygialis, Sharpe, B. M. C. xii. p. 776.

Abundant about Sacaya and Cancosa, but I did not observe any about Huasco. They are known as "Cherigüe de las Cordilleras." Beyond their call-note, which is a simple and somewhat subdued chirp, they do not appear to possess any vocal ability. They appear to be resident at the localities above mentioned, feeding on seeds.

The sexes appear similar in size and colour; I have not got their dimensions. They generally resorted to the valley and surrounding slopes from 8000 feet upward, occasionally being met with up to 13,000 feet, and perhaps higher.

They are very sprightly in their habits, and sometimes are seen in companies of from twenty to thirty, where there is some special feeding attraction. They are in many points similar to *Sycalis arvensis*.

15. *PSEUDOCHLORIS AUREIVENTRIS* (Phil. et Landb.).

Pseudochloris aureiventris, Sharpe, B. M. C. xii. p. 777; Sclater, P. Z. S. 1891, p. 133.

This species is probably of general occurrence throughout the Andean valleys of Tarapacá, where animal life finds means of sustenance. The native Bolivians called it "Canario," but this is a Spanish name, meaning a Canary, and is applied to a great many small species. I observed it at most of the places I camped at, but it did not seem plentiful, and I never saw more than one at a time. I was told that it bred about Sacaya and Cancosa.

I observed it about at altitudes of from 8000 to 10,000 feet.

It frequents places where mules, &c., are kept, near camps or houses, also grassy slopes near rivulets.

The only note I heard it utter was an insignificant chirrup.

16. *SYCALIS ARVENSIS* (Kittl.).

Sycalis arvensis, Sharpe, B. M. C. xii. p. 382.

(Hacienda Mansel, Rio Bueno, Puerto Montt, Laguna Llanquehui.)

A common species in the southern provinces, wherever wheat-growing is carried on, but not seen in the forests. It is also numerous in Central Chili. The general local name is "Cherigüe," which word is something similar in utterance to one of their call-notes. It appears to be a resident in all localities where met with. In winter-time it is usually seen in large flocks, on open ground, in search of seeds.

They are at all times most exuberant birds and very sprightly, but on the approach of the breeding-season become even more animated and noisy, and the males commence their song, which is most remarkable, not so much for its note as for the manner in which it is executed. The chief characteristic of this song is that it is invariably performed on the wing. It is commenced during ordinary flight in a twittering strain until the bird is at a height of about eight or twelve feet, when it suddenly relapses into a long-drawn whirring note; the bird at the same time keeping the wings expanded and almost motionless, except for a slight vibration, and allowing itself to sink gradually to the ground. This peculiar habit led me at first to suppose that the species was some sort of Skylark, until I found the feat was performed by a bird already known to me. This habit is kept up all through the summer; in addition, the male is most amusingly energetic during this period, especially in his attendance on the female, driving her to the nest and appearing to be in a perpetual state of motion and excitement.

They did not appear to nest at Rio Bueno until after Christmas, though pairing-operations had been commenced some time before.

The nest is placed in the grass or in a low bush near the ground. The average number of eggs is from four to five, but I noticed on various occasions that there was a difference of size in the eggs, as if two females had laid in the same nest. One especially I noted as containing four eggs, two of which were almost half as large again as the other two, though they were all of a more or less uniform colour and similarly spotted. As the birds are of a most sociable and gregarious disposition, it may be that the females occasionally share nests.

The young are of a plain brown colour on leaving the nest. I chanced one day to capture one while walking along a hedgerow; it was much smaller than an adult, but apparently quite independent, though when I placed it in a cage I had to train it to eat. At first I held it in one hand and gave it some soaked bread on the top of the first finger of my other hand. It soon learnt to eat the bread, which it did in a nibbling fashion, much as a mouse or small rodent would. It did not seem at all afraid of being handled, and soon learnt to feed by itself in a cage, but unfortunately it was attacked with the pip, to which it soon succumbed. I fancy they could be readily kept in confinement; but curiously I never saw it in the possession of any local bird-fanciers, though I noticed specimens of most of the other Finches in aviaries in Central Chili.

17. *AGELÆUS THILIUS* (Mol.).

Agelæus thilius, Sclater, B. M. C. xi. p. 343.

(Hacienda Mansel and Arauco.)

This species is found from Central Chili to Valdivia, but may be regarded as properly belonging to the central provinces, where it is everywhere known as the "Trile" or "Chili." I have been informed on good authority that Chili was named after the cry of these birds, which were noticed by the Spanish pioneers to be specially abundant about swamps and sedges, then more numerous than now. I believe this theory is also supported by Dr. Philippi.

This bird occurs invariably about reed-beds and swamps, streams, lakes, and rivers, and is found in all such localities

in the provinces of Valparaiso and Santiago. I do not know how far northward it extends—perhaps to the commencement of the desert region; but as one travels from the above provinces southward it is found in quantities, as morasses and swamps are plentiful; and this continues to Arauco, where it is numerous and resident on the coast. I did not find these birds so plentiful about Valdivia, and further south they are scarce and perhaps only occur as summer migrants. I believe they occur in Chiloe and on the adjacent mainland. I found them near the Rio Bueno.

The female is somewhat smaller than the male, and different in colour; the latter being a deep black, all except the first set of scapulars on each shoulder; so that when seated the bird appears all black, but the yellow shows strikingly when it flies. They appeared to me to be altogether insectivorous, probably feeding chiefly on some kind of grubs or aquatic insects; they feed on wet mudbanks and amongst sedge. One day when at Hospital (province of O'Higgins) I watched a female "Trile" running along the muddy border of a small river. It turned over all the small stones, leaves, bits of stick, &c., with its bill, just like a Turnstone. As I had at the time a good pair of field-glasses, I was able to watch it closely.

These birds have a peculiar smell about their plumage, common to other Starlings, but possessed by them in a more marked degree than *Trupialis militaris* and *Curæus aterrimus*.

I did not observe their breeding-habits. Except for their call-note and a few others, they do not seem to be possessed of any vocal abilities. I heard that they could be kept in confinement.

18. *TRUPIALIS MILITARIS* (Linn.).

Trupialis militaris, Selater, B. M. C. xi. p. 356.

(Hacienda Mansel, Calle-calle, and Colico.)

This bird, known in Chili as the "Loica" or "Loyca," is plentiful in all the central provinces and extends southward to Chiloe and the adjacent mainland, wherever suitable localities exist.

The female may perhaps be a trifle smaller than the male. Both sexes vary in colouring, the male attaining more brilliant plumage after the moult. The iris is black. They frequent the hills in Central Chili, and in other localities prefer large open expanses of grass-land or agricultural districts. They appear to be more terrestrial than arboreal in their habits, and I should say they fed altogether on the ground. They are to a great extent insectivorous, though they also eat various grains and, I believe, fruit.

I never found the nest of this bird, but was told it is built as a rule in one of the scattered bushes which occur frequently on hills or plains in Chili.

A full-fledged young one was brought me at Rio Bueno, which I kept alive for two days, when it was stolen by rats. It had a faint reddish tinge on the breast, and was much duller in its markings than adults. It was brought to me about the middle of February. In Central Chili this species breeds much earlier. In winter-time the birds go in flocks.

I saw one in a cage at Valparaiso which seemed thriving, and was told they could be easily kept in aviaries.

They have a good series of this species in the Santiago Museum, amongst which is a beautiful variety of the male having those parts usually bright red or scarlet of a rich yellow colour.

19. *CURÆUS ATERRIMUS* (Kittl.).

Curæus aterrimus, Selater, B. M. C. xi. p. 354.

(Hacienda Mansel and Calle-calle).

This species is abundant throughout central and southern Chili, and is generally known as the "Tordo" (Thrush).

The sexes are similar in colour, and differ little in size.

These birds prefer agricultural districts, and in winter-time are usually seen in flocks. They feed chiefly, if not altogether, on the ground, eating insects, grain, and fruit, and are very rapacious. I had one alive for some time in an outhouse in Rio Bueno; it was much like a specimen of the *Corvidæ*, being rather familiar and cunning; it did not appear afraid of other birds, and could defend itself ably

with its powerful bill and claws. The rats did not take it, although I believe only for its strength and pluck they would have done so, as it had been winged slightly and could fly little in consequence; however, one day it got out and made good its escape into some dense covert in spite of determined pursuit.

They nest in thick shrubs or bushes about six to eight feet from the ground. I found only one clutch of eggs, which were broken. The average number is four or five; they are of a light bluish ground, with a few black patches or specks.

Of the three Chilian Icteridæ, this is the most vivacious and familiar, as it is more frequent around dwellings. It is extremely voluble, having some notes not unlike those of our Starling, and a somewhat similar method of singing. In this respect, however, these birds almost excel the latter, and their performance is pleasing and frequently heard. In Arauco they commenced singing early in August. They have some pretty notes, and individuals develop capital variations in their song, as they have considerable ability in mimicking the notes of other birds. I once heard one imitate exactly the call-notes of *Colaptes pitius*. They are very sociable among themselves, and keep up a good deal of chattering and chuckling when together.

In winter I have watched a flock on ploughed land grubbing busily in the clay for worms; &c.

They are frequently kept in cages in the central provinces.

20. *AGRIORNIS LIVIDA* (Kittl.).

Agriornis livida, Selater, B. M. C. xiv. p. 4.

(Arauco.)

I only met with one specimen of this bird when on some open ground near the sea, below the town of Arauco. The ground was covered with sand-dunes and scanty bushes, amongst which the bird was flying. I saw at once it was of a species I had not before encountered, so procured it, and searched for more, but did not find any. It appears to resemble the next species closely, and is probably similar in its habits.

21. *AGRIORNIS MARITIMA* (d'Orb. et Lafr.).

Agriornis maritima, Selater, B. M. C. xiv. p. 6; id. P. Z. S. 1891, p. 134.

(Sacaya.)

This bird occurred about Sacaya and in other localities in the Cordilleras of Tarapacá. I usually observed them (singly) on rocky slopes bordering the valleys, where they perch on the tops of bushes or boulders. The Indian name is "Huayaje" (pronounced Wy-agh-a). The legs and feet are strongly formed and of a black colour, also the bill, the latter being of very stout make, and giving the bird an appearance well deserving of the appellation of the genus. I was informed that they are of a rapacious nature, and devour quantities of the small sand-lizards which frequent these localities. I seldom saw the birds, but was told they were by no means uncommon. They nested at Sacaya about November or December.

The nest (specimen sent) is composed of llama wool and rags picked up about Indian homesteads, and is clumsily constructed on ledges of rock in caves or on the sides of ravines.

I believe only two eggs are laid, but I was too late in the Cordilleras to obtain specimens. An Indian got me a nest in the end of January 1890, containing two naked young ones, which I kept some days alive by feeding them on pieces of the flesh of specimens which I skinned. They fed with avidity and seemed by no means particular, and certainly were extremely hardy, as I did not bestow much attention on them, but thought that they would be more interesting in spirit than when they had developed more growth, as they were at quite an early stage (perhaps five or six days old).

As a proof of their hardiness I may state that, owing to the frost at night, they were in a half-frozen state each morning, but came to life on being laid out in the rays of the rising sun, by which means I kept them in apparently good condition for three or four days, when I had to leave my camp, so consigned them to the spirit-jar.

I should conclude from these facts that this species would

be kept easily in confinement, with suitable food. I do not remember hearing the note of this bird. I observed them up to 11,000 feet.

22. *TENIOPTERA PYROPE* (Kittl.).

Tenioptera pyrope, Selater, B. M. C. xiv. p. 15.

(Corral, Calle-calle, Valdivia, Maquegua.)

I did not observe these birds until I went to Arauco, where I saw them about the hills round Coronel, Lota, and Laraquete, and in the interior, thence southward everywhere I went, and on Chiloe. They appeared very plentiful in the province of Valdivia. I should consider them a common resident in all these localities. I have always seen them singly, except when paired. It is generally known as the "Diucon," probably on account of its resemblance to the Diuca.

It is very similar in appearance to the birds I got in the Northern Cordilleras, called by the Indians there "Sahui-sahui"; having the same delicate texture of plumage, and finely-shaped black bill, legs, and feet. It is invariably observed on the topmost twig of a shrub or low tree, and when disturbed will fly a short distance to a similar position. The flight is undulating and buoyant. The call-note, which is constantly uttered, is very similar to that of the Bullfinch, and likewise low and subdued; it is uttered more frequently on the approach of an intruder or when its nest is threatened.

It is strictly arboreal in its habits, but occurs both in the forest parts and round cultivated lands and orchards. Its flight is generally accompanied by a peculiar clicking noise, which is, I think, made by a snapping of the beak. One of its most characteristic habits is the capture of insects on the wing; it flies at them from its perch, to which it usually returns. I never saw one appear to miss the insect it flew at, though this flight is often very remarkable, as it will generally poise itself a moment or two in mid-air and go through some curious gyrations in regaining its perch. In such instances the snapping noise is always heard several times, perhaps, but the bird also makes it in its ordinary flight, when no insects appear adjacent.

I have on two or three occasions remarked that these birds "tower" or soar upwards from a perch to a height of 20 or 30 feet, and then drop down again to the spot they quitted with no apparent object. But I think this occurred at the breeding-season, and may be accounted for as a freak of the male bird when looking for a mate, as is often observed in Greenfinches.

The nest is placed in a fork, in the stem of a shrub from 3 to 5 feet above the ground. The eggs are three in number. I fancy both birds assist in the incubation. At Rio Bueno, January seemed to be their proper nesting-season, or perhaps the end of December, as I found a young bird half fledged about the second week of January. This was the only young bird I found, and I left it to get a little more forward; but on returning a few days later it was not in the nest, and I could not find it, though I knew by the old birds it was near. I believe, from the conduct of the latter, they suspected my intention and had concealed it, as it would not otherwise have left the nest so soon.

These birds appear to feed entirely on insects caught on the wing, though perhaps they get them on branches of trees as well, but I never saw them search for food except in the air.

I seldom heard the song of this bird, but it is occasionally indulged in by the male at the commencement of the breeding-season. I cannot, however, say much as regards its vocal powers, as, though not unpleasant, the strain is so subdued as to be heard only when close at hand, and the execution is bad, being very abrupt, as if the performer would not trust his voice.

It appears to be a delicate bird and is easily killed; I do not think it could be kept in confinement.

23. *LICHENOPS PERSPICILLATA* (Gm.).

Lichenops perspicillata, Sclater, B. M. C. xiv. p. 48.

(Hacienda Mansel, Rio Bueno, and Rio Pilmaiguen.)

This species is not uncommon in Central Chili about reeds, lagunas, and rivers. I did not observe it during the winter

season in the province of Arauco; but I presume it comes there in summer, as I subsequently found it during the warm season about Valdivia in suitable localities.

I did not hear of it in Chiloe or Puerto Montt, but observed it about the Rio Pilmaiguen during my stay at Rio Bueno.

The oven-shaped nest, built of pieces of rush and mud, which I sent from Hospital, I believe belongs to this bird—at least so a native told me, but I had not been able to identify it to my own satisfaction.

It was placed in reeds about a foot and a half above the water. I had not much difficulty in wading to it, as it was only waist-deep. I do not remember whether I sent any eggs; but I believe the clutch consists of three or four, of a pretty blue colour, much like those of the common Hedge-Warbler.

These birds appear to feed entirely on insects, which they capture frequently on the wing, making a clicking noise. I have also often seen them alight on the ground in adjacent fields or grass-banks, to search for food. I never heard more than a slight call-note, and conclude that their vocal abilities are very insignificant.

24. *ANÆRETES PARULUS* (Kittl.).

Anæretes parulus, Sclater, B. M. C. xiv. p. 106.

(Maquegua.)

I saw this little bird about Hospital, but found it much more numerous in the south, where it takes the place of the Tits of Europe. It is generally called the "Torito," from the crest on its head, which the Chilians think makes it resemble a bull. It is, I believe, a resident species; I saw it as far south as I went. It is also plentiful about Coronel and in the surrounding districts. It is of general occurrence, but most abundant where covert is thick, and occurs largely in the forests, where it searches for minute insects just in the same manner as the Tits do in Europe.

It is generally arboreal, though it often traverses the shrubs very low down, and will descend to the ground to examine roots, fallen timber, &c.

Except when breeding, these birds keep in troops, and in this respect as well as their call-note they are extremely like Tits, for which they might be mistaken by a person only knowing the former and not seeing them close.

So far as I could see, they are strictly insectivorous.

They utter a rather loud chattering note and make some other sounds, but none that could properly be called a song. When feeding in company they utter a call-note like that of the Coal-Tit.

25. *CYANOTIS AZARÆ* (Licht.).

Cyanotis azaræ, Selater, B. M. C. xiv. p. 110.

(Hospital.)

This species is fairly numerous throughout Central Chili, though confined to suitable localities. In the south it is scarcer, occurring more as a summer migrant, though it is resident near Coronel. At Valdivia it comes every summer to the reed-beds by the river, but further south it is scarce. It occurs sparingly in Chiloe, according to the German observers, but on the mainland I did not see any near the Laguna de Llanquehui. I once saw one in some reeds by the Rio Pilmaiguen in February, but could not get a shot at it; it made no noise, and appeared to be a solitary wanderer. It is known as the "Siete-colores" (seven colours) in all the districts which it frequents regularly.

I only observed the birds in reeds, and I think they roost in them at night. The nest is placed on a single reed about 18 inches or 2 feet above the water. I believe three or four eggs are laid. In places where these birds are plentiful they make a good deal of chattering, the usual note being a metallic clicking or very sharp chirping; I should be inclined to compare it to tapping the point of a knife on a plate.

26. *ELAINEA ALBICEPS* (d'Orb. et Lafr.).

Elainea albiceps, Selater, B. M. C. xiv. p. 141; id. P. Z. S. 1891, p. 134.

(Pica, Corral, Hacienda Mansel, and Rio Bueno.)

This little bird appears to have a wide range, but to be a migratory species. It is, I think, entirely arboreal, but is

found in every part of Chili that I visited, frequenting forests, gardens, and bushes or shrubs of any sort. It is generally known as the "Vio," on account of its whistle or call-note, which is very characteristic. About Hospital it was called the "Chiflador," which might either mean *whistler* or *cutter*, the former from its note, or the latter from its destructive habits in gardens, where it picks off the buds of fruit-trees, though whether it does so in search of insects or not I cannot say. I observed a number in the gardens at Pica about the commencement of March, but later on I could not find one there. I did not see any whilst in Arauco during the cold season, but later on they appeared at Corral about the beginning of November (1890).

At first, after making their appearance at Corral, the birds kept very quiet and well out of sight in the bushes, but soon they appeared to have got over the effects of their journey and made themselves heard all through the forest. They appear to range a good way south, and are found on Chiloe during the summer season, migrating north in winter. On first seeing this bird I thought it was a Finch, from the stoutness of the bill and its brisk manners. It usually has the head-feathers erect, which makes the white fleck on the head very conspicuous. It captures insects on the wing in the same manner as the "Diucon," and makes the same snapping noise (at least when flying at insects). It does not, however, appear, like the former species, to rely on this method of feeding, but is continually searching about leafy branches for what it may find about the leaves. It also eats berries, especially those of the *marqui*, in the south when in season. It is not so much seen as heard, as it always flits through the leaves and flies out at insects, quickly retreating to its hiding-place. I saw one catch a good-sized butterfly. They sometimes go through more ludicrous antics even than the Diucon, swooping and twisting backwards, and occasionally fluttering through intricate branches as if shot and wounded.

The nest is usually placed in a low thick bush or shrub, 2 to 4 feet from the ground. Only two eggs are laid.

I never heard these birds make any noise when I got close on the nest. I found one nest in a *quila* bush. I did not find any nests with young, but observed young birds, which could only have flown a day or so previously, feeding on *marqui*, and, judging from some fresh droppings, on it exclusively.

The song is a somewhat variable ditty, and is more amusing than harmonious, being a series of whistles and squeaking sounds uttered promiscuously, though with energy.

This bird is held in very bad repute by gardeners on account of its depredations already alluded to.

27. PHYTOTOMA RARA, Mol.

Phytotoma rara, Selater, B. M. C. xiv. p. 406.

(Hacienda Mansel, Corral, and Calle-calle.)

This is rather a handsome species when in full plumage, but one of the most destructive birds in the central and, I believe, in all the southern provinces as well. It is known as the "Rara," but I could not get any clue to the origin of this name.

It appeared to me to be more plentiful about Valdivia than in Central Chili, but I fancy it is chiefly a summer migrant at the former place.

The iris is of Chinese orange colour.

The Raras are persistent visitors to gardens, where they bite off buds, demolish fruit, and do an enormous amount of damage if not driven off in time. They do not appear to frequent the old forest about Valdivia, but take up their abode in coppices near cultivated ground, orchards, and such-like localities. They seem to eat all sorts of green food as well as fruits and berries, but I could not discover whether they were also insectivorous.

A captured adult refused all kinds of seeds which were offered to it, but ate grass and the leaves of various weeds with avidity, also blossoms and flowers. I gave it the yellow blossoms of the gorse (which has been imported), and it appeared to relish them. Later on I observed the birds were also as partial to the *marqui*-berries as the other small species

in the south. They chew such materials thoroughly, with the teeth in the upper mandible, before swallowing them. They began to nest at Rio Bueno about the beginning of January, previous to which I had observed pairs keeping together for some time. The nest is placed in a thick bush or shrub from 3 to 5 feet above the ground. The complement of eggs is four, which seem all to hatch out invariably. The shell of the egg is rather brittle.

I have repeatedly noticed droppings of the adult birds of this species on one side of the nest during incubation, which I do not think occurs with any other species the nests of which I have examined. The young birds appear to take an unusual time to grow, and do not thrive in captivity. I took a nest with three young ones well feathered, intending to rear them, but after being kept for a month they dwindled away and died. My time was limited, and I was unable to give them much variety in the way of food, or I might perhaps have succeeded. They fed readily, after a day or so, from a spoon or quill, but never made any progress or learned to feed themselves. They made a hoarse chirping when expecting food. The note of the adult male is a rasping or grating noise, more remarkable than harmonious, and uttered after the manner of a song by the bird whilst seated on the top of a bush, in spring or summer.

The female is usually silent; the birds go in pairs or threes or fours, keeping together, but when moving they seldom use a call-note.

28. *GEOSITTA FROBENI* (Phil. et Landb.).

Geositta frobeni, Selater, B. M. C. xv. p. 6; id. P. Z. S. 1891, p. 134.

(Sacaya.)

Birds of this species are of general occurrence in the Cordilleras of Tarapacá, and I observed them up to 12,000 feet.

They are apparently resident, and breed in the mountain districts, as a rule frequenting dry open ground near the valleys.

They seem to be strictly insectivorous and terrestrial, not

perching at all. When disturbed they are more inclined to run than to fly, which they do with great rapidity and in a peculiar manner, keeping the tail spread and the head and body thrown back. They have a shrill, remarkable cry, which may be frequently heard, but otherwise have little variation.

I never saw them about the marshes or very close to water, and they seemed to frequent bare sandy spots rather than places where a little vegetation occurred.

29. *UPUCERTHIA JELSKII* (Cab.).

Upucerthia jelskii, Selater, B. M. C. xv. p. 18; id. P. Z. S. 1891, p. 134.

(Sacaya.)

This species was plentiful about Sacaya in Tarapacá, and occurred also at Huasco. I observed it at from 9000 to 11,000 feet. It appeared to be a resident and to breed there.

These birds are invariably found on the slopes bordering a valley or marsh, where there is a scattered growth of scrub affording scanty covert. They are altogether terrestrial and fly very little. When disturbed in the open they make for the nearest covert, if hard pressed flying a short distance with quick strokes and apparent difficulty. The tail is carried erect when running.

I noticed one, which happened to be grubbing for worms on a grassy spot, drive away other small birds which came near it, making an angry chattering noise.

The note of this bird is a shrill cackling sound, with more or less variation. It feeds on worms and grubs, and is probably altogether insectivorous. It nests in a hole which it excavates at the base of some bush on the hillside. I found a fresh hole at Sacaya, but after digging it out for six feet found that no nest had been made.

30. *CINCLODES PATAGONICUS* (Gm.).

Cinclodes patagonicus, Selater, B. M. C. xv. p. 23.

(Corral, Hacienda Mansel, and Rio Bueno.)

This species is plentiful all through Southern Chili. In

the south, at least about Valdivia, it is called "Chureta." They are lively birds, continually running about the banks at the water's edge and paddling now and then in the shallows. They also abound on the rocks of the sea-shore.

[Mr. Lane also obtained three examples of *C. nigrofumosus* at Hacienda Mansel.—P. L. S.]

31. *CINCLODES BIFASCIATUS*, Selater.

Cinclodes bifasciatus, Selater, B. M. C. xv. p. 25 ; id. P. Z. S. 1871, p. 134.

(Sacaya.)

This species was plentiful throughout the valley of Sacaya, especially on rocky slopes bordering water. I was told they breed among the rocks, but could not find any nests during my stay there. The sexes resemble each other.

The note of these birds is peculiar, being a loud screech, followed by a repeated chatter on a lower key. They appear to feed on insects on the banks and margins of streams.

[Mr. Lane also obtained specimens of *C. fuscus* at Sacaya. See P. Z. S. 1891, p. 134.—P. L. S.]

32. *OXYURUS SPINICAUDA* (Gm.).

Oxyurus spinicauda, Selater, B. M. C. xv. p. 30.

(Maquegua.)

This is one of the species characteristic of the great southern forest district. It has various local names, such as "Colilargo" and "Tijerito." I do not know how far north these birds extend. They are plentiful in Arauco and all through the more southerly provinces, especially in the forest-covered districts.

The iris is black. The sexes appeared to be similar. They are, I think, resident wherever they occur.

They feed like Tits, usually in flocks, and have a piping call-note, also some chattering and twittering utterances, which are frequently heard. I never found the nest, but observed young ones near Rio Bueno about February.

Sometimes large numbers are seen in the forest feeding low down and frequently on the ground, searching amongst dead leaves or decayed wood for insects, which they appear to live on. They are, however, as a rule arboreal.

33. SYLVIORTHORHYNCHUS DESMURSI, Gay.

Sylviorthorhynchus desmursi, Selater, B. M. C. xv. p. 31.

These peculiar birds, as a rule, occur only in the forest districts of the south, but I was informed that they migrate a short distance to the north in winter-time.

They frequent the densest undergrowth, especially the *guila*, and are rarely seen, as they are very retiring by nature. They have a somewhat shrill piping note, heard more frequently at sunset, and kept up continuously in the same key. It was the only note I heard them utter. They are termed "Colilargo" by the natives.

I observed some young ones, having apparently only just left the nest, about the middle of February near Rio Bueno. There were at least four in company.

[There is no specimen of this bird obtained by Mr. Lane in the British Museum, but he can hardly have mistaken the species.—P. L. S.]

34. LEPTASTHENURA ÆGITHALOIDES (Kittl.).

Leptasthenura ægithaloides, Selater, B. M. C. xv. p. 35; id. P. Z. S. 1891, p. 135.

(Sacaya and Hacienda Mansel.)

This species was common in Tarapacá, about Sacaya, and occurs generally in similar localities, where it is apparently a resident.

The specimens I got in the province of Arauco appeared to be of the same size and were similar in their habits to those obtained in Tarapacá. Both closely resembled the European Tits in all their habits, and also in their note, which was not varied, being usually merely a *twit* when feeding in company, but occasionally one uttered a querulous chattering, somewhat like that of the Great Tit, but shriller.

They fed in a Tit-like fashion on the twigs and branches of shrubs, and appeared to be strictly arboreal. I observed those of Tarapacá up to 12,000 feet.

35. PYGARRHICUS ALBOGULARIS (King).

Pygarrhicus albugularis, Selater, B. M. C. xv. p. 126.

(Maquegua.)

This species is very characteristic of the forests of Southern

Chili. I did not hear of any reliable local name for it, but the German colonists call it, very correctly, the "Baumläufer" (=Tree-creeper). The sexes appear to resemble each other.

I do not know how far north these birds extend, but I think there would not be many north of Arauco, where I first observed them in the forest districts.

I found them as far south as I went, apparently resident and in fair numbers. They do not appear to go far from the forest, and are usually found in it. Their habits, as regards feeding and movements, are the same as those of Woodpeckers and Tree-creeper, to which they are similar in appearance. They usually creep about the tops of high forest trees, and now and then come lower down, and at times I have seen one descend to examine logs on the ground.

They peck with considerable force, like a Woodpecker, and seem more closely related to the Tree-creeper than to the other Dendrocolaptidae which I observed, and from which they differ considerably both in appearance and habits.

The note is a loud and somewhat sharp chirruping, and is frequently uttered; it generally betrays the presence of the bird.

36. *PTEROPTOCHUS RUBECULA*, Kittl.

Pteroptochus rubecula, Sclater, B. M. C. xv. p. 345.

(Puerto Varas, Llanquehui, Rio Bueno, and Calle-calle.)

This species reminds one of the Common Redbreast (*Erithacus rubecula*), its colouring being somewhat similar, and its large eyes making the resemblance still closer.

It is another of the forest species of Chili, and extends from the province of Arauco southward, occurring also on Chiloe. In Arauco I do not think it is so plentiful as about Valdivia and the Laguna de Llanquehui.

These birds inhabit thick undergrowth in the forest, and are generally found in the vicinity of a stream. They come out now and then into view, when unconscious of observation,

but on perceiving anybody near, or any sudden movement, they are so hasty in their retreat that they seem to vanish into nothing. Their movements can only be compared to the flight of an arrow or such-like missile—that is, when they make a dart across an open space or retreat from observation. Otherwise they hop or run along in an easy-going way, and will come quite close under cover of bushes. The length of a full-grown male is almost 7 inches. Bill from point to gape .75 inch; tail 3 inches; wing from shoulder to tip 2.85 inches, primaries 10. The wings expanded measure slightly over 9 inches; they are very rounded in shape and not adapted for flight. In fact, so far as I remember, I never saw one of these birds fly properly; they trust entirely to their legs when trying to escape.

Their note is very loud compared to the size of the bird; it is uttered in almost the same tone as the gobbling of a Turkey.

The male of this species emits a note something like the crow of a cock; this it utters at intervals while threading its way through the labyrinths of the forest undergrowth, and it is answered by similar notes from a distance all round. I have also noticed that when they are moving in a ravine they invariably go along the bottom, down stream. They do not leave the ground as a rule, though they may occasionally perch on a stick for a second; but I never observed them hopping through the bushes as the other forest-species do. The female has a note like the crow of the male, but much more contracted. They also utter a most dismal cry, which is a sort of call-note when a pair are together. I do not think they practise the chromatic scale, so peculiar to the genus *Hylactes*.

I spent a good deal of time in Arauco trying to get these birds, but almost gave it up in despair, until I went further south, where I found them to be much more plentiful and quite numerous in the forest; so much so in some places that by waiting in a likely spot, and keeping very quiet, I generally got a sight of one, as they will then come boldly into view, as if prompted by curiosity; but if the gun be brought

quickly to the shoulder, or any sudden movement, no matter how slight, be made, they vanish as if the ground had swallowed them, and it is useless to try to get another sight of them.

These are the celebrated "Chucaco" of the Indians, who believe so much in them that if on a journey they hear them *crow* on the left-hand side they will turn back, rather than meet the misfortune that awaits them, whilst if the sound be on the right they proceed, confident of success.

37. *HYLACTES TARNII*, King.

Hylactes tarnii, Sclater, B. M. C. xv. p. 349.

(Corral, Rio Bueno, and Puerto Montt.)

I came on this species first in the province of Arauco, where it is plentiful, especially in the interior, and from thence southward as far as I went, also on Chiloe. It is well known by the inhabitants as the "Chucaco," though they do not seem to distinguish between it and *Pteroptochus rubecula*; on inquiry I was simply told that this species was the "Chucaco grande" or "mas gordo." It is, however, in repute with the Indians as a "bird of omen," like *P. rubecula*. It is evidently a resident species. I believe it extends westward to the Cordilleras, as far as the high forests reach. I should call it a species peculiar to the great forest which originally covered Southern Chili.

The first I obtained at Maquegua (No. 357) was the largest I got; it was 11 inches long from tip of bill to tip of tail; the bill, from tip to gape or forehead, about 1 inch. Tail 4 inches; the lateral rectrices appeared to number six each side; middle two. Primaries ten. Wings short and very rounded, when closed measured about 4·5 inches (shoulder to tip), and when expanded about 14 inches (tip to tip). Tibia about 2·5 inches, tarsus about 2; middle toe about 1 inch, or with claw 1·5; hind toe ·9, or with claw about 1·5 inch. Bill and feet black. Iris perhaps vandyke-brown, but a dark shade. The flesh is very delicate and palatable.

These birds are most plentiful in pieces of old forest of

some extent where *quila* and other undergrowths abound, but also occur through the more cultivated parts wherever there is sufficient covert, such as *quebradas*, banks by rivers, and such places, where the *quila* and other growths defy the agriculturist. Like all the other species of this family, they are seldom seen by the ordinary observer, and exceedingly difficult to shoot, unless plentiful and one is thoroughly acquainted with them. On first encountering them at Maquegua I spent hours waiting in their haunts with scarcely any success, and used to sit in the *quila* all day, with my gun ready, without even getting a view, although I frequently heard them in close proximity. Their most characteristic song is a series of descending notes on a chromatic scale, which appears to be the same as that of the "Turco" in the central provinces. I thought at first it was the same bird, as it is equally remarkable for the force and distinctness with which the song is uttered. It also gives a weird cackle, somewhat like the sounds produced by *Pteroptochus rubecula*, but harsher and more rapidly uttered. The first time I heard this note I was crossing a steep *quebrada* in the dusk, and whilst climbing by means of the shrubs the call resounded abruptly about a few yards off, causing me the most complete amazement, as I could not understand any living creature, unless of considerable size, making such a noise; and although I examined the place intently, and listened carefully, I could get no trace of the individual, and I felt convinced, if of the size I imagined, it could not thus get away without my knowing; so I was much perplexed until I found out the owner of this mysterious voice.

It has another note (one of alarm), which more resembles the cluck of a hen, pronounced abruptly and intermittently. When the habits of the bird are thoroughly known to a collector he may act on this as a means of getting a shot. I found, where plentiful in the forests near Rio Bueno, that the birds often seated themselves on the top of the *quila* and commenced this note. There were usually a pair together, as it was the breeding-season, and they probably had a nest near. I used to creep gradually on to them,

with as little noise as possible (though in such dense growth this usually amounts to a good deal, in spite of all precautions), and generally got a shot, but invariably had to go very close; otherwise I could not see them at all, and indeed I seldom saw one openly; but one gets used to catching a glimpse of them through the bush, and they are easily killed. They appear to feed exclusively on insects, which they search for on the ground, amongst the decayed vegetable matter, scratching a good deal like gallinaceous birds. I was told that they nest in a hole burrowed in the ground, and lay two eggs.

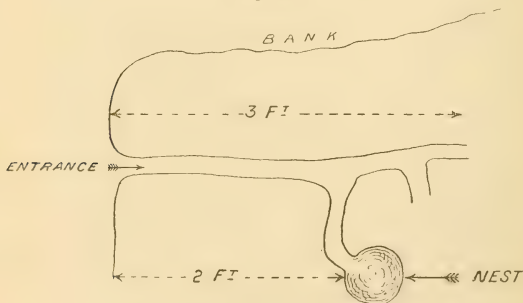
38. *HYLACTES MEGAPODIUS* (Kittl.).

Hylactes megapodius, Selater, B. M. C. xv. p. 349.

(Hacienda Mansel.)

This species appears to be plentiful in Central Chili, amongst the hills. It was fairly numerous on the hills near Hospital, but I do not know exactly how far south it extends. I was told it occurs near Coronel, but did not see it there,

Fig. 4.



Nesting-hole of *Hylactes megapodius*.

and fancy that my informant had mistaken *H. tarnii* for it, as its notes, descending in a chromatic scale, are similar. The notes, when heard for the first time, cannot fail to attract the attention of even the most indifferent observer, making him wonder what sort of creature it can be. Many English-

men I met on the coast seemed to have some idea that a certain "singing fox" was found in the woods; but though this conjecture was somewhat imaginative, it was indeed more natural to attribute the sounds to a quadruped of that size than to a small bird. I scarcely got any of these birds, as I had not time, while in their locality, to become sufficiently acquainted with their habits.

Fig. 4 gives a diagram of a nest near Mansel, which I was lucky in finding, as the bird ran out as I was passing the entrance, which was in a low bank on the hillside, close to a bush. I had to return another day with a spade to dig it out. I dug in on the main passage for about 3 feet, but this seemed to terminate after I had discovered the furthest siding, which led to nothing, and subsequently, after almost giving up the search, I found another branch, and got the nest and egg, which I sent home. The local authority among the farm hands (who knew very little) told me the clutch was only two; I think he may have been right on this occasion, as I heard others say the same.

39. *TRIPTORHINUS PARADOXUS* (Kittl.). (Fig. 5, p. 46.)

Triptorhinus paradoxus, Selater, B. M. C. xv. p. 351.

(Coronel and Calle-calle.)

This bird is plentiful from Arauco southward and also in the island of Chiloe. In the winter season it appeared to go about in companies, and I have seen at least six together. The sexes are, apparently, of the same colour, the male being perhaps better marked, and the female duller and perhaps a trifle smaller. The measurements of the male are:—Length, bill to tip of tail, 5·75 inches. Beak (tip to gape) $1\frac{1}{6}$ of an inch. Tail 2·25 inches; the middle rectrices number two, but all I examined had only four lateral each side. The wing is 2·25 inches from shoulder to tip; the two measure not more than 8 inches. Tibia 1·25 inch, tarsus 1, middle and hind toes ·75 and ·5 respectively (to ends of claws).

These birds are generally in the bottom of thick covert or on the ground, seldom rising more than 3 feet above the ground. In the more cultivated districts they also occur in thick

coppice some way from forest. They creep along twigs and branches in some extraordinary manner, which is neither hopping nor running, so far as I could see, but more like the

Fig. 5.



Tryptorhinus paradoxus, $\frac{2}{3}$ nat. size.

(From Mr. Lane's sketch, drawn by J. Smit.)

motion of Tree-creepers than anything. On the ground they hop and take little runs, like the larger species of the group. In winter-time they grub a good deal amongst the dead leaves, making a considerable rustling, but at the same time are, from their colour, almost imperceptible.

40. *EUSTEPHANUS GALERITUS* (Mol.).

Eustephanus galeritus, Salvin, B. M. C. xvi. p. 156.
(Corral.)

I did not notice this Humming-bird in Central Chili in December, 1889, but subsequently, on coming to Arauco in

the middle of 1890, I found it at first in limited numbers, and afterwards increasing as the winter passed away. Later on I observed plenty as far south as I went. Numbers may be seen in the southern forests round fuchsia-bushes when in flower. Occasionally individuals come into the rooms of houses, especially where flowering creepers grow round the window.

41. *STENOPSIS LONGIROSTRIS* (Bp.).

Stenopsis longirostris, Hartert, B. M. C. xvii. p. 585.

(San Pablo.)

The specimen sent (No. 146) was brought me by some small boys at the Oficina of San Pablo (Tarapacá) in February 1890. I could get little information about these birds: one man told me he had seen them; but I subsequently got no further satisfaction, although I made various endeavours and watched frequently at night.

42. *COLAPTES RUPICOLA* (d'Orb. et Lafr.).

Colaptes rupicola, Hargitt, B. M. C. xviii. p. 26; Selater, P. Z. S. 1891, p. 135.

(Yrba, near Vilugo.)

I know very little of this species, as I only met with it casually in Tarapacá. The Indians called it "Talhuaiti," and said it comes from Bolivia and that some (perhaps the males) have red heads. This name is evidently an imitation of the cry. Where found in the mountainous districts these birds appear to feed principally on the ground, probably on beetles and ants, of which there are a good many. They occur up to 10,000 feet, but, so far as I could ascertain, only on the eastern side of the Andes.

The iris is of an olive-yellow.

43. *COLAPTES PITIUS* (Mol.).

Colaptes pitius, Hargitt, B. M. C. xviii. p. 28.

(Corral, Arauco, and Calle-calle.)

This is a common species all through the south of Chili. I observed it in the provinces of Arauco and Valdivia, and also in Chiloe, at Puerto Montt. It is known generally as the "Pitigüe," a name taken from the note of the bird.

The sexes so closely resemble each other that it would be impossible to distinguish them at any distance; they are, so far as I could ascertain, also similar in size. They are invariably met with in pairs, seldom, if ever, singly; sometimes two or three pairs go in company.

The birds are specially plentiful on the margin of the forest or pioneer stations, where the ground has been cleared by burning. In this operation the charred trunks of the large trees are left standing a long time before the land is properly cleared by advancing civilization, and on such trees the "Pitigües" appear to find abundance of sustenance, as their loud though discordant cry is frequently heard. They often call out on being approached, thus betraying their presence. I frequently observed them feeding on the ground, on the grassy plots, especially if there were logs lying there. They proceed by creeping or going at an awkward gait, hopping and walking alternately. I was told at Rio Bueno that they nest in a deep hole in a tree-trunk high up from the ground, about Christmas, laying three or four white eggs, but I never found the nest.

44. *DENDROCOPUS LIGNARIUS* (Mol.).

Dendrocopus lignarius, Hartert, B. M. C. xviii. p. 257.

(Hacienda Mansel, Coronel, Rio Bueno, and Laraquete.)

This species seems to be distributed over Central and Southern Chili, but I never found it plentiful in any locality. In the south I did not observe it in the forests, nor did I hear of its occurrence there; but I occasionally found it about clumps of low timber on open flats and in swamps.

The local name is "Carpintero" or "Carpintero chico."

The female is somewhat smaller, and does not attain the bright red on the back of the head which makes the male conspicuous. These birds utter a peculiar call-note, by which they may be recognized, as they are not often seen unless looked for.

45. *IPOCRANTOR MAGELLANICUS* (King).

Ipcrantor magellanicus, Hargitt, B. M. C. xviii. p. 481.

This is an inhabitant of the forests of Southern Chili, and

probably peculiar to them, unless found on the eastern side of the Andes. I believe it does not extend north of Arauco, and in this latter province only occurs inland. I could get no positive proof of its existence in Chiloe, but it probably occurs in parts of it which are still under forest. I never met with *Colaptes pitius* and *Dendrocopus lignarius* in the virgin forest, except about clearings, but the present species, on the contrary, does not occur out of it. On this account it is not often obtained, and is consequently considered to be somewhat a *rara avis*, though pretty well known by the name of "el Carpintero" or "Carpintero grande."

The feet and legs are grey, the claws black, and the iris is orange-rufous. The iris of the female is much redder than that of the male, and I was told by a Chilian that this was invariably the rule.

Owing to the destruction of the forest by encroaching settlers, these birds have been driven back towards the interior, and are therefore scarcer on the coast. I was fortunate only on a few occasions in meeting with them whilst in the province of Valdivia. I believe they always go in pairs, like the "Pitigüe," but frequently two or three pairs go together. They have not a loud call, like the Pitigüe, but make curious rasping and chuckling noises, such as might be heard from Magpies. The noise they make hammering away the bark can be heard a good way off. I have seen large holes made by them in the trunk of a growing tree, but could not ascertain the object, as these were not sufficiently large for nesting, and must have occasioned more labour than the bird could be expected to exert in its ordinary feeding operations.

46. CERYLE STELLATA (Meyen).

Ceryle torquata, subsp. *a. C. stellata*, Sharpe, B. M. C. xvii. p. 123.

This handsome species is, I believe, most abundant in Tierra del Fuego and the most southerly provinces. I fancy it does not occur further north than Arauco; I did not meet with any in this province, but I heard that it occurred, although very scarce. It is more numerous about Valdivia in winter-time.

The stomach of one bird contained only the remains of small freshwater crabs. The note is a loud remarkable chattering. The bird generally sits about 4 feet above the river-surface when fishing.

47. *CYANOLYSEUS BYRONI* (Children).

Cyanolyseus byroni, Salvad. B. M. C. xx. p. 207.

(Near San Antonio.)

At the beginning of December, 1889, I observed a large flock of these Parrots in Central Chili, about ten miles inland from San Antonio. The district was a series of hills, mostly cleared and cultivated. The Parrots were feeding on a stretch of fallow, which was overgrown by large thistles, the seeds of which attracted them. I did not meet with them subsequently. They are known in that district by the name of "Loro." I believe that they breed near Cauquenes in holes in the cliffs. They make the most deafening clamour when disturbed.

48. *HENICOGNATHUS LEPTORHYNCHUS* (King).

Henicognathus leptorhynchus, Salvad. B. M. C. xx. p. 209.

(Rio Bueno.)

This is a very numerous species in Southern Chili, where the birds are found in large flocks, and are more plentiful in the interior. They are generally called "Choroi" by the natives, sometimes "Catita." I did not get any in Arauco, but was told they occurred, and as their appearance and habits when at large are similar to those of *Microsittace ferruginea*, it is not easy to tell them apart, unless they are seen very close.

They feed on certain trees in the forests, to which they appear to be restricted, as they do not resort much to cultivated fields; but I was told at Rio Bueno that in some years they make incessant raids on gardens and orchards, doing great havoc when the fruit began to ripen.

49. *MICROSITTACE FERRUGINEA* (Müll.).

Microsittace ferruginea, Salvad. B. M. C. xx. p. 210.

(Calle-calle and Maquegua.)

I found this Parrot in large flocks in the forest part of

Maquegua, and subsequently about Valdivia. All the Parrots I shot further south were *Henicognathus leptorhynchus*, but the natives said the smaller species occurred as well. They are properly called the "Catita," but the names of "Choroi" and "Loro" are also applied to them. The sexes are similar. The iris of this species is russet-brown. The natives eat these Parrots when they can get them.

Their habits are similar to those of *H. leptorhynchus*, and they utter the same discordant cries, and appear to be confined to the forests, feeding on similar trees.

50. *BOLBORHYNCHUS ORBIGNYI* (Bp.).

Bolborhynchus orbignyi, Salvad. B. M. C. xx. p. 236.

Bolborhynchus orbignesius, Sclater, P. Z. S. 1891, p. 135.

(Sacaya.)

These little Parrots occur in flocks at Sacaya, Yabricoya, and other localities in Tarapacá, from November to March.

They are called the "Lorito." They fed on the ground in the valley of Sacaya wherever the coarse Andean grasses grew, the seed of which they appear to relish. I observed them up to 11,000 feet. When on the wing, and in fact almost always, they keep up a good deal of chattering and screaming.

The sexes appear to be similar. The eye is black.

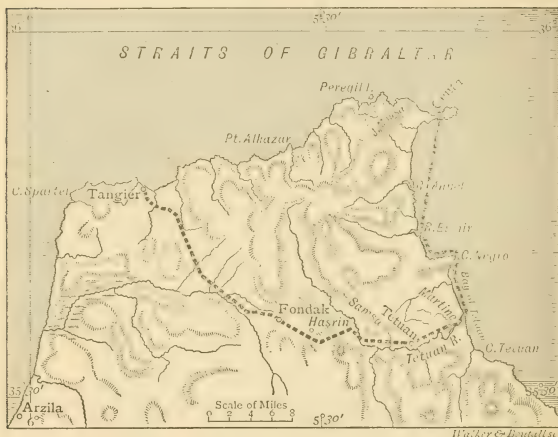
[To be continued.]

IV.—Ornithological Notes from Morocco.

By P. W. MUNN.

In the beginning of May 1895 I left Gibraltar for Ceuta *viâ* Algeciras,—as no boat runs direct from Gibraltar to Ceuta,—and any anticipated difficulty with the Custom-house at Algeciras about my gun and ammunition would be evaded by taking them direct from one steamer to the other, without the knowledge of the authorities, and concealing them beneath the cushions in the cabin of the Ceuta boat. The usual uncomfortable passage across the Straits was made in $2\frac{1}{2}$ hours and on nearing the port the gun-difficulty

again presented itself. Fortunately a respected and well-known (in Ceuta) Spanish boatman offered, for a consideration much less than the Customs duty, to convey them ashore in his baggage, and, on arranging to hire his boat for the voyage to Tetuan by sea the next day, volunteered to have them safely stowed on board before my departure next morning. So at 4.30 A.M., after spending the night at the



MAP OF PART OF MAROCCO.

Fonda in Ceuta, I embarked in a felucca, with a crew of four men and my baggage, to sail to Tetuan. On the way I landed for a short time at the mouth of the river Esmir, and out of a small flock of Ringed Plovers shot two males, but there were no signs of their breeding there. The marsh higher up the stream and running parallel with the sea-shore was now nearly dry; the little water that remained was covered with slimy green weed, in which a few Storks were wading, and the thick weeds and long grass round the edges were dry and forsaken by their usual feathered inhabitants. On a former visit in October there was a large sheet of water here, on and about which were quantities

of water-fowl—Teal, Wild Duck and Coots, Common and Buff-backed Herons, a Flamingo and a Crane; and a pair of Ospreys were to be seen plunging into the surface after their prey. The heat was at this season severe, and searching among the thick grass in the marsh, and on the sandy dunes nearer the sea, was trying. Moreover, the birds seemed to have sought shadier quarters, with the exception of a few Herring-Gulls from the neighbouring Cape Negro, which closely followed, and apparently commented on, my movements. A few small Waders were on the edge of the water, and a Black Kite (*Milvus migrans*) sat on the top of a clump of stunted tamarisk; while swarms of bright yellow locusts rose at every step from the sand in short flights. On re-embarking I sailed on to Cape Negro, and drifted slowly round it in the shade of the high cliffs. Herring-Gulls (*Larus cachinnans*) were sitting on their nests, and Shags (*Phalacrocorax graculus*) had full-grown young, some still in the nests, others, with the old birds, sitting on the isolated rocks beneath the cliffs, only gliding off into the water when the rock was struck with an oar—so tame were they; nor would the Gulls take flight unless closely approached.

Large flocks of Rock-Pigeons (*Columba livia*) flew in and out of the caverns and fissures, and in a nest in a hole in one of the pillars of a natural arch standing out from the Cape a pair of Bonelli's Eagles had young, and I also saw a Raven (*Corvus tingitanus*) fly into its nest, with young, in a fissure. The boatmen were highly amused in trying to identify the various birds seen by means of Saunders's Manual, which I had among my baggage, and in explaining to me the different Spanish names for them.

On rounding the Cape, the Bay of Tetuan was entered, with a stretch of white sandy beach to the north of the mouth of the Tetuan river, on which the wretched huts of a few Moorish fishermen were built; to the south stretched the Riff coast, with the curious little watch-towers conspicuous on every promontory. On the south bank of the river, reaching back to the foot of the mountains, are

extensive marshes, where there were troops of Buff-backed Herons (*Ardea bubulcus*), often attendant on the cattle grazing there. A few Terns were also seen here, but none procured. I reached the mouth of the river at 2.30 p.m., and we were able to sail up as far as the Martine Custom-house, where I had intended to stop, but it was full, so the baggage was unloaded on the shore and I rode on to Tetuan, and, on arriving there, put up at the house of one Nahon, in the Jewish quarter of the town. Partridges (*Caccabis petrosa*) and Goldfinches (*Carduelis elegans*) are frequently kept in confinement by the Moors, the former being probably used as call-birds; and Partridges' eggs are always for sale in the markets during the season, as delicacies.

I walked one day to a village called Samsa, some eight or ten miles north-west of Tetuan, at the head of a small valley running at right angles to the valley of the Tetuan river. The way first lay through narrow lanes among the luxurious vegetation of the gardens surrounding the town; here the only bird of any note seen was *Parus teneriffæ*: then across some hilly ground covered with the inevitable scrub palmetto and brilliant with innumerable flowers, where Crested Larks only abounded. Thence I proceeded along the side of a valley beneath steep cliffs, over which a few Vultures (*Gyps fulvus*) were sailing, and neared the village through gardens and luxurious vegetation and across running streams flowing down from the cliffs above. In some places there were walls of rock completely covered with curtains of moss and maidenhair fern. Hence some narrow lanes with trees meeting overhead and streams trickling along the pathway, at which Turtle-Doves (*Turtur communis*) were frequently disturbed, led me to the cultivated terraces above the village and on to the head of the valley. This was shut in by a high semicircle of cliffs, from the foot of which the hillside sloped away, covered with thick scrub-jungle and strewn with fallen boulders from the cliffs above. The white-washed mosque of the village and a few inconspicuous huts—which I had carefully avoided—were lying far below, near the stream, half hidden among the olives and fruit-trees of

their surrounding gardens. Both the Common and Lesser Kestrels were seen plentifully here, and a dusky Bulbul (*Pycnonotus barbatus*) in the gardens below.

Accompanied by three or four Moorish youths from the village and the soldier who had guided me from Tetuan, we thoroughly searched the cliffs for nests and found a Falcon's (*Falco punicus*) with two fully-grown young, and several empty Kestrels' from which the young had flown. In the caverns numerous Rock-Doves lived, and flew in and out in flocks when disturbed.

The midday meal was eaten in the shade of a huge fallen rock and shared with my companions, who especially appreciated the wine of the infidel, while the soldier made capital shooting among the Rock-Doves which kept flying in and out of the holes in the cliff behind. This cliff was of a most curious formation, about 20 feet high, and composed entirely of a mass of petrified leaves, wood, and other vegetable matter. It was honeycombed with holes of all sizes, the hollow remains of boughs, the bark of which had petrified while the interior had rotted away; and these holes were now occupied by Rock-Doves, Starlings (*Sturnus unicolor*), and Jackdaws, all busily engaged in nesting-operations. In a niche of the rock close above my head was a small nest like a Tree-Creeper's, with five white eggs speckled with red at the larger end, but I could not catch a glimpse of the birds belonging to it.

On another day I went by land to Cape Negro, intending to pass the night in the watch-tower on the summit. On the way there, across the palmetto-covered plain lying between Tetuan and the Cape, was a clump of ancient olive-trees growing in a marshy piece of jungle and tenanted by a colony of White Storks, the gigantic nests of which, two or three in a tree, could be seen from afar. Most of the nests now contained small young ones; in one, however, the young were fully grown, and another nest had not yet been laid in. Usually the old birds would not leave the nests until I had climbed up and scrambled over the edge. A pair of Ravens also had a nest in one of the trees; this and

the deserted nest of a large bird of prey were the only other nests I found in the clump. Storks in Marocco often build on the roofs of the frail huts of the Moors in the villages.

On nearing the sea we had a rough ride along the cliffs, through a dense pathless scrub of palmetto, myrtle, gum-cistus, holly, heather, and other scrubby plants, and in and out of innumerable rocky ravines, the sides of which were too steep to be ridden down and had to be negotiated on foot, and on hands as well occasionally. The tower was built on the highest point of the Cape, and was a square, whitewashed structure, entered by a rope-ladder let down from a window 20 feet from the ground. It was occupied by an old Moor, who appeared to subsist principally on Gulls' eggs and crustaceans—judging from the shells.

Besides the Gulls and Cormorants here, there were several Buzzards (*Buteo desertorum*) which were nesting in the cliffs, and in a marsh near were a small flock of Mallards (*Anas boschas*), the Ducks probably nesting among the scrub surrounding it, while a Marsh-Harrier was hunting along the opposite bank.

The evenings at Tetuan were usually spent on the roof of the house, watching the crowds of Swifts, both *Cypselus apus* and *C. murinus*, sweeping about the buildings, the Sparrows (*Passer domesticus*) busily employed in family duties, and a pair of Swallows (*Hirundo rustica*) which flew in and out of the *patio*, where they had a nest with young. The river-bank, near the remains of the fine bridge which once spanned the stream, was also a favourite evening resort, and many of the beautiful Bee-eaters (*Merops apiaster*) were always to be seen here, perching on the solitary fig-trees among the corn. From the appearance of their beaks and tail-feathers they were nesting near. A single White-bellied Swift (*Cypselus melba*) I saw here one evening, along with a belated flight of the other species.

After a stay at Tetuan I left at 5.30 one morning on mule-back for Tangier, which I reached at 4.30 in the afternoon after ten hours in the saddle, having made two short halts on the way—for breakfast at a fondak about fifteen

miles from Tetuan, and for lunch in a watercourse at midday. When passing down the valley below the village of Ain Hasrin, I saw a large Vulture (*Gyps fulvus*) wheeling along towards the high mountains ahead.

Among these mountains, near the fondak, we encountered heavy squalls of rain, which drenched us all and transformed the track into a rushing stream; but the sun came out when we reached a lower elevation and quickly dried our clothes. In the fondak, Sparrows (*Passer domesticus*) were nesting in the baskets put up for the Pigeons beneath the arches round the courtyard, and on reaching the plains again on the Tangier side I saw Stonechats (*Pratincola rubicola*) and a few Grey Shrikes (*Lanius algeriensis*). Corn-Buntings (*Emberiza miliaria*) and Crested Larks (*Alda cristata*) were to be seen on every side. Among the oleanders in the water-courses nearer Tangier, *Aëdon galactodes* was plentiful and not at all shy.

The following is a list of the principal birds noted during this and a preceding visit to the country in autumn:—

- Blackbird (*Turdus merula*). Tetuan in October.
- Stonechat (*Pratincola rubicola*). Tangier in May.
- Rufous Warbler (*Aëdon galactodes*). Tangier in May.
- White-vented Bulbul (*Pycnonotus barbatus*). Tetuan in May.
- Ultramarine Tit (*Parus teneriffæ*). Tetuan in May.
- Spotless Starling (*Sturnus unicolor*). Tetuan in May.
- Chough (*Pyrrhocorax graculus*). Tetuan in October.
- Jackdaw (*Corvus monedula*). Tetuan in May.
- Raven (*Corvus tingitanus*). Tangier and Tetuan in May and October.
- Algerian Grey Shrike (*Lanius algeriensis*). Tangier in May and October.
- Swallow (*Hirundo rustica*). Tetuan in May and October.
- Goldfinch (*Carduelis elegans*). Tangier and Tetuan in October.
- Sparrow (*Passer domesticus*). Tetuan in May.
- Corn-Bunting (*Emberiza miliaria*). Tangier in May.
- Crested Lark (*Alda cristata*). Tangier and Tetuan in May and October.
- Swift (*Cypselus apus*). Tetuan in May.
- Mouse-coloured Swift (*Cypselus murinus*). Tetuan in May.
- White-bellied Swift (*Cypselus melba*). Tetuan in May.
- Bee-eater (*Merops apiaster*). Tetuan in May.
- Little Owl (*Athene noctua*). Tetuan in October.
- Griffon Vulture (*Gyps fulvus*). Tetuan in May.

Marsh-Harrier (*Circus aeruginosus*). Tetuan in May.

Rufous Buzzard (*Buteo desertorum*). Tangier and Tetuan in May and October.

Bonelli's Eagle (*Nisaetus fasciatus*). Cape Negro in May.

Black Kite (*Milvus migrans*). Esmir and Cape Negro in May.

African Peregrine (*Falco punicus*). Tetuan in May.

Kestrel (*Falco tinnunculus*). Tetuan in May.

Lesser Kestrel (*Falco cenchris*). Tetuan in May.

Osprey (*Pandion haliaëtus*). Esmir in October.

Shag (*Phalacrocorax graculus*). Cape Negro in May.

Heron (*Ardea cinerea*). Esmir in October.

Buff-backed Heron (*Ardea bubulcus*). Tetuan in May and October.

White Stork (*Ciconia alba*). Tangier and Tetuan in May.

Flamingo (*Phoenicopterus roseus*). Esmir in October.

Wild Duck (*Anas boschas*). Tetuan in May and October.

Teal (*Querquedula crecca*). Esmir in October.

Rock-Dove (*Columba livia*). Tetuan and Cape Negro in May.

Turtle-Dove (*Turtur communis*). Tetuan in May.

Barbary Partridge (*Caccabis petrosa*). Tangier and Tetuan in May and October.

Coot (*Fulica atra*). Esmir in October.

Crane (*Grus communis*). Esmir in October.

Ringed Plover (*Ægialitis hiaticula*). Esmir in May.

Herring-Gull (*Larus cachinnans*). Cape Negro in May.

V.—On the Genus *Psittacella*. By ERNST HARTERT.

(Plate III.)

IN 1891, when writing the 20th volume of the Catalogue of Birds, Count Salvadori recognized three different species of the genus *Psittacella*, Schleg., hitherto known only from New Guinea. At present the genus is enlarged by one more species, described quite recently by Mr. Rothschild, and we can, in my opinion, distinguish as a slightly differentiated subspecies *Psittacella brehmi pallida* of A. B. Meyer. A revised "key" to the species of this genus is therefore necessary, which I give as follows:—

1. } Wing more than 100 mm.: 2.
 } Wing less than 100 mm.: 7.
2. } Breast with crescentic black bars: 3.
 } Breast without black bars: 5.



3. { Head brick-red ; upper tail-coverts deep crimson : *P. picta* ♀.
 { Head olive-brown ; upper tail-coverts greenish, barred with black : 4.
4. { Head browner : *P. brehmi typica* ♀.
 { Head more greyish olive : *P. brehmi pallida* ♀.
5. { Upper tail-coverts crimson : *P. picta* ♂.
 { Upper tail-coverts greenish, barred with black : 6.
6. { Chin and throat browner : *P. brehmi typica* ♂.
 { Chin and throat more greyish olive : *P. brehmi pallida* ♂.
7. { Breast dull reddish, with crescentic black bars : *P. modesta* ♀.
 { Hind neck red, with crescentic black bars : *P. madaraszi* ♀.
 { No bars, except on the rump : 8.
8. { Breast and hind neck olive-brown : *P. modesta* ♂.
 { Breast green ; hind neck with ochreous-yellow spots : *P. madaraszi* ♂.

I should explain that I have purposely constructed the "key" in this way, instead of the one we are accustomed to in the Catalogue of Birds, because this is the sort of key to be used in the 'Tierreich' of the German Zoological Society. To us, who generally use the other kind of "keys," it is at first not so convenient, perhaps, but it is so simple that it does not require any explanation, and it has the advantage that in very long keys it is not necessary to cut the lines shorter and shorter, thus wasting much space.

Psittacella picta (described by Mr. Rothschild in the Bull. B. O. C. no. xxxviii. p. v) is a beautiful species, both sexes of which are depicted on Plate III. It is chiefly characterized by the rufous head and the deep-red upper tail-coverts in both sexes, while the male is also ornamented with an orange- (not sulphur-) yellow, almost or quite complete, band on the hind neck, and a blue breast, which is not developed in the immature male.

In the 'Report on New Guinea' for 1894, Ornith. p. 2, Mr. De Vis* speaks of some specimens which he says he would have referred to Dr. Meyer's *P. pallida*, were it not that Count Salvadori had stated that there is no difference between *P. brehmi* and *P. pallida*. Mr. De Vis, however, mentions that his specimens are smaller, and have "an obvious submetallic bluish-green gloss, invisible in certain lights, on the lower surface of the edges and tips of the

* Ann. Rep. Brit. New Guinea, 1893-94 (Brisbane, 1894), p. 100.

rectrices." From the series now in the Tring Museum, which embraces examples of all the species of the genus, I am able to state that there is no constant difference in size between *P. brehmi typica* and *P. brehmi pallida*, and that the sub-metallic bluish-green gloss on the lower surface of the rectrices is merely an individual character, obvious in some, quite absent in other specimens. I believe it is visible in quite freshly-moulted individuals. On the other hand there are sufficient differences in other respects, as explained by me in 'Novitates Zoologicae,' vol. iii. pp. 18 and 255.

The genus *Psittacella* thus constitutes itself as follows:—

1. *Psittacella brehmi* (Rosenb.), occurring in two forms:
 - a. *P. brehmi typica*, Arfak Mountains;
 - b. *P. brehmi pallida*, Owen Stanley Mountains.
2. *P. picta*, Rothsch., Mt. Victoria, Owen Stanley Mountains.
3. *P. modesta* (Schleg.), Arfak Mountains.
4. *P. madaraszi*, A. B. Meyer, Owen Stanley Mountains.

Hardly more than half of the great island of New Guinea having been explored, and that only, for the most part, insufficiently, we shall not be surprised if more new forms belonging to this genus are discovered.

VI.—On the Variations of a Lory (*Eos fuscata*) as exhibited by Specimens in the Turati Collection. By Prof. GIACINTO MARTORELLI (Civic Museum of Milan).

THE specimens of *Eos fuscata*, Blyth, of which I give the descriptions, are fourteen in number, and show every stage of development, from the nestling to the adult bird, with striking gradations between the yellow and the red coloration, which appear to be totally independent of age, sex, and geographical range. The red colour seems to replace the yellow only as an ordinary intensification of the yellow pigment, which becomes more or less red in various individuals, independently of their age.

Count Salvadori, in his 'Ornitologia della Papuasias e delle

Molucche' (pl. i. p. 266), has expressed his opinion that the principal characters of the young of *Eos fuscata* are—the acuminate form of the rectrices, the double band across the throat and breast not well distinguished, and the pale general colour. But in his catalogue of the Psittacidae (Brit. Mus. Cat. vol. xx. p. 31) he gives as a characteristic feature of the young the yellow colour "*where the adult bird is red.*"

The examination of the specimens belonging to the Turati Collection does not lead me to the last conclusion of Count Salvadori, though it is not impossible that a yellow-coloured young bird might pass into a red-coloured adult in some cases.

Dr. St. George Mivart, in his magnificent 'Monograph of the Lorics' (pp. 41, 42), is inclined to regard *Eos fuscata* as a "*dimorphic bird*," and Wallace, as quoted by him, admitted two distinct varieties of this species. Finally, Dr. Ant. Reichenow, in his 'Vögelbilder aus fernen Zonen, die Papageien'*, figures the adult *Domicella fuscata* as orange-coloured.

I now give short descriptions of the specimens of this Lory in the Turati Collection.

(a) No. 16249. Mansinam (*Laglaize*). Nestling (♀?).—

General colour saffron-red; the double band across the throat and breast not well defined; band on the nape indistinct, and passing gradually into the rusty-red colour of the hind neck; lower back and uropygium impure yellowish white; interscapular region rusty brown; central tail-feathers with their inner webs largely red; all the rectrices acuminate.

(b) No. 4124. New Guinea (*Verreaux*). Young (♀?).—

The red colour on the lower parts more restricted than in the preceding specimen, and inclining to orange on the abdomen; the bands on the nape, throat, and breast not well defined; interscapular region dark brown, edged with greyish; lower back and uropygium more distinctly yellowish white; tail-feathers acuminate, the central ones with a narrow red space on the inner web.

* Fig. 9, tab. 31 (edit. Kassel, 1878-83).

- (c) No. 8718. Havre Dorey (*Frank*). Young (?).—The band on the nape olive, well defined; the two bands on the throat and breast very narrow, but clearly separated from the interposed dark brown space; the yellow colour slightly inclining to orange on the belly, and especially on the tibiae; back blackish brown, with whitish edgings near the base of the neck; inner secondaries olive-brown; *tail-feathers not acuminate*.
- (d) No. 15127, ♀. Havre Dorey (*Doria*, ex *Bruijn*). Adult.—Vertex and nape olive-yellow; bands on the throat and breast; middle of the abdomen bright yellow, perfectly defined from the blackish brown of the thoracic bands and sides of the body; tibiae tinged with orange and minium; interseapular region black; inner webs of tail-feathers, on the basal portion, orange; inner secondaries with an olive tinge.
- (e) No. 15126. Geelvink Bay, New Guinea. Adult.—Differs from the preceding in the more intense orange tinge on the underparts and the bright minium of the tibiae. On the vertex a tinge of chestnut. The inner webs of the outer primaries with distinct orange tinge.
- (f) No. 9392. New Guinea (*Schneider*). Adult.—Bright orange on the underparts, except the tibiae, which are red; flanks and thoracic band dark brown; innermost secondaries inclining to maroon.
- (g) No. 9393. New Guinea (*Schneider*). Adult.—The nape olive-yellow; an intense chestnut tinge on the vertex; the anterior bands orange, as also the middle of the abdomen and the bases of the tail-feathers; inner secondaries chestnut.
- (h) No. 19756. Fly River, New Guinea (*Whitely*). Adult.—Nape olive-yellow; the chestnut tinge on the vertex more intense; on the two anterior bands and abdomen the yellow feathers are broadly edged with red, and the tibiae tinged with scarlet. The red edges appear also on the yellow part of the outer primaries; inner webs of tail-feathers with orange-red bases.
- (i) No. 19755. Fly River, New Guinea (*Whitely*). Adult.—

Like the preceding, but more intensely coloured, and with the bands across the throat bright yellow.

- (j) No. 19757. Fly River (*Whitely*). Adult.—Nape olive-yellow; throat-band yellow mixed with large orange spaces; vertex deep rusty red; band on the breast, middle of the abdomen, and tibiae almost entirely scarlet; tail-feathers with orange bases; inner secondaries ochraceous.
- (k) No. 15125, 12 (xii.) 1875. Surui, Jobi. Adult.—Nape olive-yellow; no yellow on the anterior parts, where the feathers have a dark orange-red tinge on the two bands, the abdomen, and the tibiae; innermost great coverts and inner secondaries intense maroon; tail-feathers with red bases on the inner webs.
- (l) No. 520. New Guinea (?), 1872. Adult.—In the same plumage as the preceding.
- (m) No. 4123. New Guinea (*Verreaux*). Adult ♂.—Nape dark olive-yellow; band on the throat minium, that on the breast scarlet like the abdomen and tibiae; inner secondaries maroon; tail-feathers with the basal portions of inner webs minium.
- (n) No. 16248. Amberbaki (*Laglaize*). ♀.—Band on the nape dark ochraceous; throat and breast, middle abdomen and tibiae deep scarlet, sharply separated from the dark brown colour of the thoracic band and flanks; inner secondaries maroon; inner webs of the tail-feathers and primaries also scarlet.

To recapitulate, it appears from the preceding descriptions (1) that the red colour has a tendency to replace the yellow from the lower parts to the higher ones, beginning from the tibiae and going upwards to the throat; (2) that at the same time the amount of the rusty red or maroon tinge on the inner secondaries becomes greater; (3) that the immature birds, whether they belong to the red or to the yellow form, have *always acuminate tail-feathers*, and the coloured bands on the anterior parts not well defined and less brightly coloured.

VII.—*Further Notes on the Birds of the Pyrenees.*

By HOWARD SAUNDERS.

‘THE IBIS’ for 1881 (pp. 365–392) contained some account of my ornithological experiences in the western portion of the Pyrenees during the winters and springs of 1882 and 1883, with which were incorporated notes made in the extreme east of that range in the autumn of 1876, as well as a few observations in 1879. Various Members of the B. O. U. have subsequently added to our knowledge, *e. g.* Mr. James Backhouse (Ibis, 1887, pp. 66–74), Mr. W. Eagle Clarke (*op. cit.* 1889, pp. 520–552), and Mr. H. M. Wallis (*op. cit.* 1895, pp. 64–85). The last-named was principally in the central districts, between Eaux-Chaudes and Luchon, as well as on the Aragonese side; while Mr. Clarke, with his companion Mr. Basil Carter, ascended the valley of the Ariège to Ax-les-Thermes, whence they made their way—through Hospitalet, and in spite of new snow—into the little republic of Andorra. Mr. Clarke’s was the earliest account of the birds of that district, and only those who have had similar experiences can realize the difficulties to be contended with in the higher mountains in the month of May. At that time the rains have not ceased at the lower elevations on the French side, the old snow is melting in the mountains, and the fresh snow that falls from time to time is soft and impedes locomotion. May is, however, the best month for finding birds breeding, and it seemed possible that, by beginning in the south-east of France, thence passing into Catalonia, and working along the base of the Pyrenees on the Spanish side, drier and more settled weather might be expected than was probable in the central or western regions. Moreover, the country from Luchon eastward as far as the western side of Mount Canigou was unknown to me, and there were several points which required investigation. For instance, it was desirable to learn whether there was any foundation for the late Dr. L. Companyó’s statement that the Black Grouse is found in the Eastern Pyrenees, as well as to learn something about the range of the Hazel-Grouse; while,

though interesting birds of prey could hardly be expected to be conspicuous in Catalonia, the most prosperous and populous province of Spain, yet, even there, some marshes and lakes appeared on the map, especially in the sweep of the Gulf of Rosas, and these seemed worthy of investigation, to say nothing of the rocky coast on either side. It was true that a score of years ago I had learned by sad experience that the *étangs* on the French coast between Narbonne and Perpignan were vanity, and Mr. Eagle Clarke's subsequent visit was fruitless, but better things were hoped from Spain. As regarded the weather, the outlook was dubious. The winter had been absolutely open; no snow had fallen, and almost any pass could have been crossed up to the middle of March; but then a heavy storm took place on the French side, and all the "ports" and "cols" were blocked. In Spain, however, no rain had followed, and Aragon was reduced by drought to absolute famine, while processions and prayers were the order of the day, even in free-thinking Catalonia. It seemed unlikely that this state of affairs could last much longer, but the latter part of April came and the news was that the drought continued. My friend Colonel H. W. Feilden had agreed to give me the pleasure of his company, and, as we were obliged to return to England by the middle of June, the 25th of April found us at Toulouse.

At the excellent museum of that city I was pleased to find my former acquaintances, Dr. Eugène Trutat, the Director, and M. Victor Bonhenri. M. Adrien Lacroix still retained his valuable collection of Pyrenean birds; while M. Félix Regnault showed us his grand series of spoils from the caverns—complete skeletons of cave-bear and hyæna, skulls of cave-lion, and, rarest of all, one cranium of a panther, with any number of stone implements. Moreover, the celebrated archæologist M. Cartailhac introduced us to the interior of many ancient *hôtels* and other buildings which we should never have found out from guide-books. Our first excursion was up the valley of the Ariège—passing the old towns of Foix and Tarascon—to Ax-les-Thermes, which Mr. Eagle Clarke has so well described; and thence

we hoped to break new ground by crossing the Col de Maremare to Quillan, in the almost parallel valley of the Aude. The general opinion being that this was impracticable, we returned to Toulouse, never expecting to see Ax again, but *Diis aliter visum*.

Next day we started for Quillan by way of Carcassonne, where we stopped a few hours, and the climb to the picturesque *cité* in almost tropical heat will long be remembered. In the cemetery Nightingales were singing loudly. Serin Finches were uttering their peculiar "frizzling" twitter, and the abundance of large castings at the foot of a cypress indicated the presence of some species of Owl. Ascending the valley of the Aude, where the soil is red, like that of Devon, and quite different from that of the Ariège, we reached the pretty little town of Quillan in a heavy thunderstorm, the swollen clay-coloured river confirming the evidence of the panorama of the Pyrenees on the way from Toulouse, that there had been plenty of recent snow on the French slope.

Quillan itself is not more than 1000 feet above sea-level, but the scenery beyond it, on both sides of the valley, is very fine; the rocks being peculiarly rugged in outline and white in colour, studded with dark-green forest in strong contrast. After heavy rain all night, the weather lifted sufficiently to allow us to take a walk in the hills and obtain some idea of the surroundings; but the Meadow-Bunting and the Crag-Martin were almost the only species which could not have been met with at home, and before noon the rain came down in torrents, with a sharp fall in temperature. Next morning (May 1st) we made an early start in the direction of the Corbières, a wild spur of mountains branching off the main chain to the north of the valley of the Tet, and consequently to the northward of Perpignan: a region almost unknown, except to a few French *alpinistes*. It was on its skirts—in the Forêt des Fanges and some other localities—that Companyó said the Black Grouse was found, and certainly, if anywhere, the Corbières seemed the most likely, owing to their geographical position at no great distance from the

Cevennes. Heavy storms of rain, with biting wind, checked our progress, and we did not get to the forest. Along the river Crag-Martins were numerous; a Sparrow-Hawk dashed across the road and just missed his bird; Grey Wagtails were conspicuous, and the White Wagtail was not uncommon; a pair of Pied Flycatchers were watched; Linnets of the brightest colour swarmed, and the Nightingales sang bravely in defiance of wind and rain. In the course of the day we thrice saw Ravens, evidently taking food to their young in some crags in the defile of the Pierre-Lis. Along this gorge, through a tunnel known as the *Trou du Curé*, after its worthy originator, the Abbé Amand, we penetrated for some miles in the direction of the Baths of Carcanières by a magnificent road, parallel to which the railway is being pushed on. This highly picturesque route has been opened to Mont Louis (about 45 miles) only since 1887, and it was with great regret that we renounced our intention of passing through it, for it traverses the Capcir—the finest forest-district of the Eastern Pyrenees. Our landlord, however, dissuaded us, in spite of his obvious interest being to let his vehicle or horses, and he positively refused to post us beyond Carcanières under the state of the weather, adding that we should probably get no further and would have to return. Considering that Mont Louis is the highest (nearly 5000 feet) and the coldest garrison-town in all France, even in summer, it would have been rash to go on in such weather; but this second check was doubly severe, because Mont Louis is exceptionally well situated, standing, as it does, near the head of the river Tet, which runs down to Perpignan, passing Prades and the Vernet side of Mount Canigou; while, in the opposite direction, Bourg-Madame and Puigcerdá can easily be reached, and the best part of Catalonia becomes accessible. There was, however, nothing for it but to go back to the plains and take the railway.

At Carcassonne, where it had been oppressively hot a few days before, every one was wrapped up and seeking shelter from the *mistral* wind; the great *étangs* of Sijean and Leucate, and even the usually blue Mediterranean, were

nearly white with foam-crests, and a few Gulls, with Red-shanks along the shores, were the only birds visible in the driving clouds of dust. Changing train at Perpignan, we ascended the Tet valley to the pleasant town of Prades, the usual point of departure for Vernet-les-Bains. We merely visited the latter, which was at that time frequented only by "serious" invalids, most of them in a very sad state; the butterfly-visitors, for whom the grand hotels exist, come later. Vernet is somewhat shut in, and although there are good excursions to be made from it, I much prefer Amélie-les-Bains, on the other side of Canigou, where I passed some weeks in the autumn of 1876. In the valley of La Taurinya, by the ruined abbey of Saint-Michel-de-Cuxa, we identified a Tree-Sparrow, a very local species in the south; House-Sparrows were generally distributed, but less numerous than the Chaffinch; the Crested Lark and the Woodlark were met with, Swallows and House-Martins swarmed, a male Cirl Bunting was well seen, and the Meadow-Bunting haunted every bank, not to mention several common species. One of our excursions was to Molitg, where we called upon a M. Massiá, who gave us some information about the natural history of the neighbourhood and pointed out a favourite resort of the Eagle-Owl on a ruined fortress on a crag. He possessed no specimen of the Black Grouse, and had no knowledge of the Hazel-Grouse, though evidently well acquainted with game-birds, and he ought to have been a good sportsman, for he owned two lovely Gordon setters. On the 4th May we saw our first Woodchat-Shrike, but the wind was so furious that few birds desirous of a quiet life would face it.

On May 5th we descended to Perpignan, and passed on to Banyuls-sur-Mer, a little town and port on the frontier, well known by reputation at least, owing to its marine biological station, the *Laboratoire Arago*. There we were cordially received by the Préparateur, M. Adrien Robert; subsequently meeting Mr. Minchin, of Merton College, Oxford, and M. Severtzoff, son of the well-known Russian naturalist. The last had been out all day in pursuit of whales, to one of

which the harpooner had got "fast," but the iron had broken, and, considering the absolute inexperience of all concerned, this was just as well. These whales were called *cachalots*, but, from the description of their "spouts," they were certainly not sperm-whales. In the small collection were a young Razorbill (an uncommon bird in the Mediterranean) and a Black Tern, while a young Lesser Black-backed Gull and the Mediterranean representative of our Manx Shearwater were waiting to be skinned. The two following days were devoted to the exploration of the coast on both sides of the frontier, and some time was wasted over a bird which it was hoped might prove a Lanner Falcon; but Kestrels and a Black Kite were the only birds of prey identified. We got very near to a nest of the Raven containing young birds; Eared Wheatears were abundant on the hill-side, and Pied Flycatchers in the small cork-woods, where we also observed the Marsh-Tit; an occasional Hoopoe flitted past, and the favourite haunt of the Whinchat seemed to be small scrub along the seashore.

Passing on to Figueras, in Spain, no time was lost in setting out for the marshes on the Gulf of Rosas, and also for Cadaqués, about 20 miles off, on a rocky peninsula of the same name. Owing to the drought in Spain, there was somewhat less water than usual, but by the time Castellon-de-Ampurias was reached we had found that the expanses of water marked on the maps had long since been drained, while the marshes were mere spongy bogs, with just enough green stagnant water to be unwholesome and to harbour a few waterfowl in winter. Some Marsh-Harriers were there, of course, and a Stork seemed to have a nest by some farm-buildings in the distance, while Crested and Short-toed Larks ran along the roads; but nothing of importance was noticed. At Castellon-de-Ampurias there is a fine old church, with a double font of immense size, respecting which the French guide-books are silent; while at Rosas the ruined fort, so stubbornly defended by Lord Cochrane, is worth a visit, and the view, as the road winds upward towards Cadaqués, is superb. As regards birds, there was not much

on the way: Finches were numerous in the few places in the gorges where there was a little water; Pied Flycatchers were frequent among the olive-trees, and Woodchats not uncommon; while now and then a Red-legged Partridge ran or fluttered across the road. At Cadaqués itself we could learn nothing about "the daring cragsmen" spoken of by Don Estanislao Vayreda y Vilá in his '*Fauna Ornitológica de la Provincia de Gerona*,' and although the entire juvenile population seemed anxious to meet our wishes, and even to encourage our hopes as fast as they could learn them, their statements did not bear the test of examination. No doubt some Gulls nest in the cliffs, and possibly the two species of Petrel common in the Mediterranean, but no islands were visible which seemed at all suited to either the Eleonora Falcon or Audouin's Gull. And there was nothing particular in the scenery to make Cadaqués worth a visit.

At the fine old city of Gerona the only item of ornithological interest was in our hotel "*de los Italianos*," where the cook had several Nightingales in separate cages in the *patio*; the best of these songsters having been five years in captivity. On Sunday, May 10th, there was a vast procession to a natural amphitheatre in the hills, among the ruined fortifications above the city. For some time past the heavens had been black with clouds, and next day there was a great rain, which lasted all the way to Barcelona. Nothing need be said about that well-known city, and at Montserrat, where the heat was intense, the only birds of interest were the Black Chat and the Blue Rock-Thrush. We then proceeded due northward to Ripoll, where the Ter, coming down from Camprodon, joins the Fresér, which descends from the steep sides of the Puigmal and the Col de Nuria. Here we stayed several days in hopes of fishing, but the water was very thick and the few fish proved to be "burbot" or grayling, and not trout. The country is mountainous and thickly wooded—beech below and fir above—but very difficult to work; while Ribas, higher up the valley of the Fresér, although very picturesque, is quite unsuited to the larger birds of prey, the mountains being chiefly

rounded and cultivated up to the woods. The whole valley was full of electric-lighted factories, worked by water-power, and, as Feilden remarked, it was a superior Lancashire, without the smoke, and with snowy mountains in the background. Dippers, Sandpipers and Grey Wagtails were frequent along the torrents; the Wheatear, Robin, Redstart, Wren, Hedge-Sparrow and Yellow Hammer were more or less common; the Choughs belonged to the red-billed species, and the only un-English bird was the Meadow-Bunting. By a good road, made since the last Carlist war, we crossed the Sierra de Cadi—the first line of the Pyrenees—by the Col de Tosas (5800 ft.), with fine views of the Puigmal and La Nuria; the chief ornithological features being the Red Rock-Thrush, which was hovering in the way that Mr. Wallis has described, and the Water-Pipit, which became abundant as we ascended. The wind was bitter, and there was evidently snow or rain ready to come down, but we accomplished the slight descent to the frontier town of Puigcerdá (4000 ft.) without a wetting. Built in terraces with gardens and orchards, on the side of a hill above a fertile plain and with mountains all round at convenient distances, Puigcerdá is not only very picturesque, but is also well suited as headquarters for a naturalist, or for a fisherman who does not expect too much; but at this time the three rivers which unite at the bridge of Soler, and which undoubtedly contain trout, were full of snow-water, and no trout would rise to a fly with the prevailing bitter wind. When that dropped or shifted we had rain, sleet or snow, as the case might be. At the foot of the hill and just across the little river Raur, about a mile off, is the small French frontier town or village of Bourg-Madame, whence a high road runs eastward to Mont Louis, while another goes northward just within the French frontier, and crosses the Col de Puymorens to Ax-les-Thermes. From Puigcerdá we intended to proceed westward, by La Seo de Urgel, into Aragon, but on the night of the 22nd very heavy snow began to fall and continued almost without intermission till Sunday, 24th, when matters began to look a little brighter. Any retreat into Spain was

cut off, for the Col de Tosas was now deep in snow, while progress westward was out of the question, but the carrier of the mail from Bourg-Madame thought he might get us across the Col de Puymorens on horses. In the meanwhile we walked about as much as the weather would allow, on both sides of the frontier; but the birds we saw need not be enumerated here.

On May 25th we started early and drove to the village of Porté, where, in rain and sleet, we took horses; but as we ascended the weather so far improved that an occasional glimpse of the mountain peaks was obtained, and we could at least see some birds. The road was absolutely filled with soft snow to the tops of the cuttings and banks, over 8 feet deep, and even when following the line of the descending streams on either side of the watershed, where the snow was thinnest, the horses sometimes floundered up to their girths. Here the tracks of Ptarmigan and Alpine hare were plentiful; Wheatears and Water-Pipits abounded, and there were several Meadow-Pipits; a Sparrow-Hawk was sitting on the telegraph-wire; some Alpine Choughs passed in the mist, while on the very summit (rather higher than 6200 ft.) Turtle-Doves were migrating, and a Willow-Warbler was crouching in a benumbed condition under the lee of a rock. The last was put into Feilden's hat for protection, and soon announced by its movements that it was recovering animation. Rapidly descending by very rugged paths, we passed the track leading to Andorra on our left, and reached Hospitalet, "a really miserable place," as Mr. Eagle Clarke well remarks, with "the narrow crooked passages which pass for streets ankle-deep in manure, or filth cast from the windows." Nothing speaks better for his ardour than the fact that he and his companion passed several days—and nights—in this squalid hamlet. As we waded from our horses to a little *auberge*—not the *hôtel*, but the house of the postman—the wandering pigs were a good deal in the way, and three ancient ladies who sat on three hillocks—each with a distaff in her hand like a representative of the Paræ—were good enough to call to the swine in a language which

the latter certainly understood and obeyed. Mounting a wooden staircase to the general room, the Willow-Warbler was taken out of Feilden's hat and placed on the window-sill, where we watched it preening its feathers and preparing for flight; when a cat, the presence of which no one had suspected, came with a rush under our arms, and the poor little Warbler was never seen more. After this tragedy, we rattled down to Mérens, and so to Ax-les-Thermes, warmth and civilized life.

At Ax we remained nearly a week, making excursions as well as the unsettled state of the weather permitted, but not a day passed without rain or hail. One walk was up the Oriège (a tributary of the Ariège) to Forge d'Orlu, where a few interesting birds were observed; another was by Mérens to the Lac de Comté, one of a chain of lakes where large trout undoubtedly exist, for they carried away our entire "casts," but we landed none. A little higher up was Ptarmigan-ground, and Grey Partridges were calling below. We had secured the services of a *chasseur* who was also a sort of parish-councillor, a good and truthful man, with one trifling lapse. A heavy storm had swept over the Lac de Comté, and while we were sheltering in a diminutive cabin belonging to a shepherd, the councillor was entertaining the owner—and himself—with a plentiful supply of the wine which we were far too cold to desire. Yet more, our friend had purchased from that shepherd for 2 francs a very old yellow-breasted Marten (*Mustela martes*) which, it was said, had just been dropped by a Golden Eagle; and when we reached Mérens the councillor drank to his bargain in a stiff glass of absinthe. Mounting our carriage and driving rapidly down the road, something was said about Vultures. "Ah, do you take an interest in Vultures?" said the councillor (as if we had not been talking of birds for the last four days): "what a pity I did not know it sooner, for I would have shown you where they nest in any numbers in the great cliff by Mérens, but it is now too late to go back; that must be for another day." We did not go back, for we had now passed that cliff for the third time without seeing a sign of a Vulture; and we

maintained a qualified belief respecting a likely-looking spot which was pointed out, lower down, as the eyrie of the Golden Eagle. But with regard to Capercaillie and other game-birds the councillor, in his calmer moments, knew what he was talking about, and he was a good fisherman, after his kind. Altogether, Ax is by no means a bad place for headquarters.

We visited Tarascon twice, and on the first occasion we observed Swifts (which had not been seen at Ax), and I saw one pair of Alpine Swifts. There, and along the valley of the Ariège, are several interesting caverns, and in one of these Feilden secured fragments of the bones of the cave-bear and of man. From Tarascon we drove to St. Girons, to avoid the wearisome journey by way of Toulouse—passing through fine scenery of the second class, and baiting at the little town of Massat, where there is an excellent old-fashioned inn, superlative cooking, and a grand view of the snowy mass of Mont Vallier in the background. The latter part of the road was along the wooded banks of a river, and rain was falling in torrents. At St. Girons there is a large hotel, frequented by, and only suited to, commercial travellers.

At Luchon I had the pleasure of renewing my acquaintance with the distinguished mountaineer and geologist, M. Maurice Gourdon, who told me, amongst other things, that “according to common report” (and we know what the equivalent of rumour is), the ibex had been almost exterminated in the Valle de Ara (also known as the Val de Arazas) in Aragon, by *English* sportsmen, who had spared neither female nor kid. I felt safe in assuring him that neither the late Sir Victor Brooke nor any of Mr. E. N. Buxton’s party had been guilty of such atrocities. We made excursions to the Lac d’Oo and the Vallée de Lys, subsequently visiting Argelès-Gazost and Gavarnie, and continuing westward to my old quarters at St. Jean-de-Luz; but such well-trodden ground calls for no special remark. The rain, it rained every day. We ascended the Rhune mountain, and, for the first time in my experience, neither a Bearded nor a Griffon Vulture was to be seen there; but this was hardly to

be wondered at, for not even a Vulture's eyes could have pierced the rain-scuds which swept over; driving us to take shelter among the rocks and to make rushes for new positions, as our countrymen did in the assault on the Rhune in November 1813. At the very last, one fine day came for our visit to San Sebastian, where we saw the Blue Rock-Thrush on Monte Orgullo, for the first time in the west; and then, homeward, by way of Bayonne. I may mention that the museum in the Mairie of that city has been destroyed by fire, and in it perished the local specimens of White's Thrush and Pallas's Sand-Grouse which were mentioned in my former paper.

In the following list only those species are set down which were actually identified, and several which we ought to have seen find no place.

TURDUS VISCIVORUS, L.

The Mistle-Thrush was generally distributed. Young birds were met with in the beech-woods near Ripoll, Catalonia, on May 18th; while on the road from Tarascon to St. Giron we saw an adult attacking a Magpie, and further on, a bird on its nest.

TURDUS MUSICUS, L.

The Song-Thrush was observed on the skirts of the fir-woods above Mérens and at about 5000 feet. It will be remembered that Mr. Eagle Clarke found a nest of this species in the beech-region, lower down—the first authentic record of the breeding of this Thrush in the higher Pyrenees.

TURDUS MERULA, L.

The Blackbird was observed in every suitable locality, but it was by no means a conspicuous species.

TURDUS TORQUATUS, L.

I saw a pair of Ring-Ouzels well, on June 10th, in the glen between the Little and the Great Rhune, at about 2000 feet elevation, and just the place where one would have expected to find the birds breeding in Scotland or the

north of England. But with the rain-storms prevailing there was little inducement to search for their nest.

MONTICOLA SAXATILIS (L.).

The "Red" Rock-Thrush (as it may be called for distinction) was observed when crossing the Col de Tosas; a fine male hovering for some seconds just below us, and then slowly dropping down into the valley, while later three more were observed. On the French side this species was not seen.

MONTICOLA CYANUS (L.).

We did not meet with the Blue Rock-Thrush on either side of the extreme east of the Pyrenees, though I had often seen it near Amélie-les-Bains in former years; but we saw it well on Montserrat, where its presence might have been expected. It was, however, a great surprise to find this species on the fortress of Monte Orgullo, San Sebastian, for I am unaware of any record of its presence in the western district.

SAXICOLA ŒNANTHE (L.).

The Wheatear was observed from Ripoll upward, and became abundant on the higher ground, especially on the top of the Col de Puymorens. We repeatedly noticed what Mr. H. M. Wallis calls the deep electric blue of the back and head in the male, but careful examination with binoculars convinced us that we had to do with no new species.

SAXICOLA ALBICOLLIS, Vieill.

The Black-eared Wheatear was common on the hillsides between Banyuls and Portboll, and again in the amphitheatre of hills above Gerona; after which it was not observed. *Saxicola stapazina* was not identified anywhere.

SAXICOLA LEUCURA (Gm.).

On this occasion I did not meet with the Black Wheatear in the Eastern Pyrenees; but its dark form was conspicuous among the rocks near the convent of Montserrat.

PRATINCOLA RUBETRA (L.).

Early in May Whinchats were always to be seen at Banyuls-sur-Mer, on our walk along the shore to and from the Laboratoire, flitting down to the sea-wrack, or perched on the bushes a few yards inland; we also saw some on the hillsides. In the upper valley of the Ariège, where Mr. Eagle Clarke found it common, we managed to miss it or omitted to note it.

PRATINCOLA RUBICOLA (L.).

The Stonechat was observed at Quillan, in the valley of the Aude, and near Prades in the valley of the Tet.

RUTICILLA PHŒNICURUS (L.).

Above Ribas, along the valley of the Fresér, we saw several Redstarts on May 20th, and again on the 24th round the great reservoir at Puigcerdá, so the species probably breeds in Catalonia.

RUTICILLA TITYS (Scop.).

Though constantly on the look-out for the Black Redstart, it was not until May 21st that we caught a glimpse of an adult male, on the roof of a house at Puigcerdá. Afterwards we found it generally distributed, but by no means so abundant as might have been expected. At Orlu, near Axles-Thermes, a male was paired in the dark grey plumage of the first year; and a female went off her nest in the bone-cavern at Tarascon.

ERITHACUS RUBECULA (L.).

In Catalonia we did not meet with the Redbreast until some distance up the valley of the Fresér, above Ribas, and it is chiefly an inhabitant of the higher wooded mountains; we were, in fact, rather surprised to find it so low down as Tarascon, in a narrow lane, leading to the bone-cavern.

DAULIAS LUSCINIA (L.).

From Carcassonne upward the Nightingale was everywhere to be heard, up to at least 5000 feet on the Catalonian side; it sat singing on pea-sticks along the road near Ripoll, and seemed to match its voice against the roar of the snow-

fed mountain-streams. Under these conditions the note was often harsh, but the bird was too much in view for there to be any mistake about its identity.

SYLVIA CINEREA (Bechst.).

The Whitethroat was generally distributed, from the coast-line up to about 4000 ft. in Catalonia, and 3000 ft. in France.

SYLVIA CURRUCA (L.).

The Lesser Whitethroat was thoroughly identified by both of us on the way down from La Rhune on June 10th—the first time for the Basque Provinces.

SYLVIA ATRICAPILLA (L.).

Strange to say, we did not see the Blackcap on the Spanish side, nor in the valley of the Ariège, where Mr. Eagle Clarke found it breeding. Our only record is on the road leading to the Vallée du Lys, above Luchon.

SYLVIA ORPHEA, Temm.

On the way from Figueras to the Gulf of Rosas we caught a glimpse of the Orphean Warbler, and afterwards I thought I heard its note. It was not seen in France, and, still more strange, *Sylvia melanocephala*, usually conspicuous in the south, was not seen anywhere. Probably the weather made all these Warblers skulk.

SYLVIA HORTENSIS, Bechst.

The Garden-Warbler was remarkably abundant at Puigcerdá, especially in the trees round the reservoir.

REGULUS CRISTATUS, Koch.

The Golden-crested Wren was seen at Luchon. We never identified the Fire-crest (*R. ignicapillus*), which I had often seen near St. Jean-de-Luz in former years.

PHYLLOSCOPUS RUFUS (Bechst.).

The only place where the Chiffchaff was identified was at Puigcerdá.

PHYLLOSCOPUS TROCHILUS (L.).

The Willow-Warbler was common round Puigcerdá; the

sad fate of the bird picked up on the Col de Puymorens has already been told.

PHYLLOSCOPUS BONELLI (Vieill.).

Identified above Puigcerdá.

ACROCEPHALUS TURDOIDES (Meyer).

The Great Sedge-Warbler was seen in the cane-brakes near the Gulf of Rosas. On the west side we saw and heard the bird and found its nest in a little reedy pool at St. Jean-de-Luz, and it breeds in the swamps near Biarritz.

ACROCEPHALUS PHRAGMITIS (Bechst.).

The Sedge-Warbler was observed on the banks of the river below Ripoll.

ACCENTOR MODULARIS (L.).

As Mr. Eagle Clarke remarks, the Hedge-Sparrow is a mountain species in the Pyrenees. We saw it well above Ribas, in Catalonia; while, as regards the French side, we can endorse his record of its abundance at Hospitalet.

The Alpine Accentor was not seen; we were not high enough for it, or the mist on the Col was too thick.

CINCLUS AQUATICUS, Bechst.

In Catalonia the Dipper was plentiful on the Fresér, above Ribas; less abundant on the upper waters of the Ariège valley, above Ax-les-Thermes.

ACREDULA CAUDATA (L.).

The Long-tailed Tit was observed in the tall elms near St. Jean-de-Luz.

PARUS MAJOR, L.

The Great Tit was seen among the cork-woods on the way to Cadaqués; in the beech-woods above Ripoll; and, on the French side, at Luchon.

PARUS ATER, L.

The Coal-Tit was identified only near Ripoll in Catalonia, and near Luchon in France.

PARUS PALUSTRIS, L.

The Marsh-Tit appears to be very local. We identified it

among the small cork-woods near Banyuls-sur Mer, and by the stream at Vernet-les-Bains, under Mount Canigou.

On this occasion the Crested Tit was not observed.

PARUS CÆRULEUS, L.

The Blue Tit was feeding its young in a pollard willow at Puigcerdá on May 22nd.

CERTHIA FAMILIARIS, L.

This inconspicuous species was observed only at Luchon, where it was common.

On this occasion we were unfortunate in failing to see the Wall-Creeper. Our *chasseur* at Ax-les-Thermes said he had received orders from Toulouse to procure the bird, but had not succeeded. It is, however, generally distributed in the Pyrences, and the late Mr. A. C. Chapman obtained a specimen as far west as Burguete, in Navarre.

TROGLODYTES PARVULUS, Koch.

The Wren must be widely distributed, but it intruded itself on our notice only in the valley above Ribas.

MOTACILLA ALBA, L.

The White Wagtail was seen along the rivers in the valleys of the Aude and the Ariège, as well as at Ripoll, but it does not seem to be plentiful so high up.

MOTACILLA MELANOPE, Pallas.

The Grey Wagtail is by far the most numerous member of the genus on both sides of the range. It swarmed along the river towards Orlu, above Ax-les-Thermes, and was abundant on all the streams further west.

MOTACILLA FLAVA, L.

The Blue-headed Wagtail was identified at Puigcerdá.

ANTHUS PRATENSIS (L.).

Most of the Meadow-Pipits had gone northward, and we saw only a few, on the cold wet Col de Puymorens.

ANTHUS SPIOLETTA (L.).

From Ribas upward on the Spanish side, on the top of Puymorens, and down to Ax, the Water-Pipit was very

numerous wherever running water, moist meadows, or boggy ground existed; it was also found on La Rhune, St. Jean-de-Luz, where I had not seen it before.

ORIOLUS GALBULA, L.

At Ax, on May 26th, we saw a pair of Golden Orioles in the trees by the second bend of the road leading to Belcaire, and a nest of the previous year was easily recognizable.

LANIUS COLLURIO, L.

The Red-backed Shrike was not met with until St. Jean-de-Luz was reached. There it was abundant: more so than the next species.

LANIUS POMERANUS, Sparrm.

The first Woodchat Shrike was noticed near Villefranche, on the road to Vernet, on May 4th; afterwards we saw birds near Cadaqués, at Ripoll, and at Puigcerdá in Catalonia, several near Ax, and a fair number round St. Jean-de-Luz.

MUSCICAPA GRISOLA, L.

We certainly saw the Spotted Flycatcher in several places, but Luchon is the only locality for it I find noted.

MUSCICAPA ATRICAPILLA, L.

A pair of the Pied Flycatcher were observed on April 30th at Quillan, on the Aude, and many were seen in the small woods between Banyuls and the Spanish frontier, as well as in similar localities on the road to Cadaqués.

HIRUNDO RUSTICA, L.

The Swallow swarmed in the lower regions, and was abundant at Puigcerdá on the one side, as well as at Ax on the other. As Mr. Eagle Clarke has remarked, 5000 ft. seems to be about the elevation attained.

CHELIDON URBICA (L.).

We found the House-Martin up to the same elevation as the Swallow, but Mr. Eagle Clarke noticed it nesting still higher in Andorra. Passing westward, it was abundant as far as Argelès-Garzost and St. Sauveur, but in the Basque Provinces not one was seen, nor a sign of a nest: a fact

which tallied with my previous experiences. At Tarascon birds were breeding inside some fissures in the bone-cavern, the nests being out of sight. I had already remarked this in the cliffs near Fishguard, in Pembrokeshire, where the mud seems to be deficient in tenacious properties.

COTILE RUPESTRIS (Scop.).

The Crag-Martin was common along the Aude on April 30th, and was observed in suitable places between Ribas and Puigcerdá; also at Mérens, above Ax, as already noted by Mr. Eagle Clarke.

LIGURINUS CHLORIS (L.).

The Greenfinch was observed at Quillan; we did not notice it at Ax.

CARDUELIS ELEGANS, Stephens.

On May 9th Goldfinches were seen on the road to Cadaqués, where a fledgling was brought to us; and the species was abundant at Puigcerdá. On the French side it was fairly common at Ax and Orlu.

SERINUS HORTULANUS, Koch.

The Serin Finch was generally distributed.

CHRYSOMITRIS CITRINELLA (L.).

The Citril Finch was identified only in the fir-woods above Mérens, on the way to the Lac de Comté.

PASSER DOMESTICUS (L.).

I am happy to say that the House-Sparrow was nowhere very numerous at any moderate elevation, and we did not see one at Ax. Further west and lower down this parasite is commoner.

PASSER MONTANUS (L.).

The Tree-Sparrow seems to be very local; we identified it near Prades, and again near Puigcerdá.

FRINGILLA CŒLEBS, L.

The Chaffinch was generally distributed in France, and observed at Puigcerdá.

LINOTA CANNABINA (L.).

The Linnet was common on the French side, and observed from Ribas upward in Catalonia.

PYRRHULA EUROPEA, Vieill.

The Bullfinch was only seen at Luchon, where M. Gourdon assured us that it was only too common. I have never seen it in Eastern Spain, but it may well occur in Catalonia. In the Basque Provinces and in Navarre it is by no means rare.

EMBERIZA MILIARIA, L.

The Corn-Bunting was noticed in the lower districts on the French side.

EMBERIZA CITRINELLA, L.

From Ribas onward to Puigcerdá the Yellow Bunting was abundant, and, on the French side, from Ax downward and westward; the males brilliant in colour.

EMBERIZA CIRLUS, L.

A male Cirl Bunting near Prades was the only individual seen, but the species is widely distributed and common in the Basque Provinces.

EMBERIZA CIA, L.

The Meadow-Bunting was almost ubiquitous on both sides of the Pyrenees; we thought that the foot of the Cirque de Gavarnie (4300 ft.) was a record elevation, but Mr. Eagle Clarke found this species at 5100 ft. in Andorra.

At this season of the year no Starlings were seen, but we were told that some nested in the dovecotes round the reservoir at Puigcerdá—a story we did not believe. In winter they are common.

PYRRHOCORAX GRACULUS (L.).

Red-billed Choughs were identified at Baños below Ribas, and in France at Pierrefitte (where there is a large colony) and at Gavarnie. They look deceptively large on the wing.

PYRRHOCORAX ALPINUS, Koch.

Although well known in the Eastern Pyrenees, the only place where we identified the Yellow-billed Chough was on

the Col de Puymorens ; afterwards, at the Lac d'Oo, above Luchon.

GARRULUS GLANDARIUS (L.).

The Jay was seen at Montserrat, and was found nesting near Ripoll. It is generally distributed.

PICA RUSTICA (Scop.).

In Catalonia the Magpie was noticed at Puigcerdá. On the French side there were nests in the trees on the *Place* at Ax, and there was one just outside Gavarnie. Lower down the species is common enough.

CORVUS MONEDULA, L.

Mr. Eagle Clarke identified the Jackdaw at Ussat-les-Bains, below Ax, so we looked out for it and saw it there also. This is the only place in the Pyrenees where I have observed this species, in spite of the watch kept for it in former years.

CORVUS CORAX, L.

At Quillan a pair of Ravens were several times observed taking food to their young ; at Banyuls another pair were continually going to and from their nest, which probably held young ; the species was also seen and heard near Puigcerdá, around Ax, and several times near Luchon. The flight of these Mountain-Ravens is particularly fine and raptorial-like.

CORVUS CORONE, L.

Only two Carrion-Crows were identified near Figueras and two at Puigcerdá, so the species is probably scarce in summer.

The Rook was not seen.

ALAUDA ARVENSIS, L.

The Skylark was common in the higher part of Catalonia and swarmed at Puigcerdá ; at Ax we did not note it.

ALAUDA ARBOREA, L.

We saw the Woodlark at Prades and at Puigcerdá ; it was rather numerous, frequenting bleak rough hillsides in a way that surprised us.

ALAUDA CRISTATA.

The Crested Lark was seen at Prades, and, as might be expected, it was common on the low ground in Catalonia.

ALAUDA BRACHYDACTYLA, Leisler.

The Short-toed Lark was noticed between Figueras and Rosas.

CYPSELUS APUS (L.).

Swifts were plentiful at Quillan on April 30th; also in Catalonia up to Puigcerdá. We remarked upon their absence at Ax, but lower down the Ariège we saw some at Tarascon, and at less elevations the species was common.

CYPSELUS MELBA (L.).

Far above the Common Swifts at Tarascon, I saw a couple of Alpine Swifts for a few moments, and I think it probable that a pair or two nest in the detached clock-tower of Saint Michel, an old building with projecting eaves open below, and just suited to the habits of this bird.

LYNX TORQUILLA, L.

Seen at Forges d'Orlu, near Ax, May 27th.

GECCUS VIRIDIS (L.).

The Green Woodpecker was seen at Ax; at Argelès-Gazost it was plentiful.

We did not see the Black Woodpecker, but it is undoubtedly found above Ax. In the Vallée de Lys, above Luchon, we saw many holes in the spruce-firs which could not have been made by any smaller species.

UPUPA EPOPS, L.

Seen between Banyuls and Cerbère.

CUCULUS CANORUS, L.

Heard and seen near Prades.

GYPS FULVUS (Gm.).

On our return to Luchon from the Lac d'Oo, we saw one unmistakable Griffon soaring high in air. It is chiefly in autumn that this Vulture makes its appearance on the French side of the High Pyrenees. Passing westward, the fact that

we did *not* see Griffons on the Rhune or in the neighbouring part of Spain is one of the most remarkable of our experiences.

CIRCUS ÆRUGINOSUS (L.).

Marsh-Harriers were seen over the marshes of Rosas.

CIRCUS CYANEUS (L.).

In the basin of Puigcerdá, but within the French boundary, we distinctly saw a female Hen-Harrier make two or three sharp turns and then drop abruptly into an immense extent of rye. There could be no doubt that she had a nest near, and we took rough cross-bearings with a vague hope that some lawful entry might be found. Eventually we found a track which ought to have led us to within about a hundred yards, and she certainly never rose; moreover, no amount of stoning would make her rise. In Spain we might have walked in, and probably no one would have minded, but in France a *procès-verbal* would probably have been the result. Later, we saw an adult male on some moorland between Ax and Forge d'Orlu.

BUTEO VULGARIS, Leach.

The Buzzard was seen near Puigcerdá; also at Argelès-Gazost and near St. Jean-de-Luz. It is a common species.

ACCIPITER NISUS (L.).

The Sparrow-Hawk was seen at Quillan; also on the Col de Puymorens; and several times near Ax, where a pair had a nest.

MILVUS MIGRANS (Bodd.).

The first Black Kite was seen near Cerbère on our return to Banyuls. We did not see the species again till we reached Bayonne, and at first it came to me as a shock that not a bird was visible from the bridge where I had formerly seen so many. The fact was that the tide was running out, and the Black Kites were lower down the Adour, for in the afternoon there were nine in view at once. On the Spanish side, near San Sebastian and round St. Jean-de-Luz, we saw several. The remarkable thing was the absence of the Red

Kite round St. Jean-de-Luz, where I had formerly seen that bird every day in winter and early spring.

Against the sky-line and the woods, near Luchon, we saw some birds of prey which we could not identify. They were neither Eagles nor Vultures, and I am inclined to think that they may have been Honey-Buzzards, for this species looks very large on the wing.

FALCO PEREGRINUS, Tunstall.

The Peregrine was well seen near Puigcerdá. Again, while waiting for the train at Pierrefitte, above Argelès-Gazost, we had a long view of a bird of this species, and it will be remembered that above Pierrefitte there is a large colony of Choughs, to which the Peregrine is very partial, in default of Pigeons.

FALCO TINNUNCULUS, L.

The Kestrel was generally distributed.

CICONIA ALBA, L.

A Stork was seen near a lonely farmhouse between Figueras and Rosas.

TURTUR COMMUNIS, Selby.

The Turtle-Dove was seen at Prades, Banyuls, Puigcerdá, and on the summit of the Col de Puymorens (6200 ft.).

TETRAO UROGALLUS, L.

The Capercaillie is not uncommon in the fir-woods above Ax. In the early morning of May 27th three cock-birds were calling ('*chantant*'): one rather small, with little tuft, and one much larger, with a fine beard; the third we did not see. Several hens were in attendance.

All the evidence that we were able to collect is that the Black Grouse (*T. tetrix*) does *not* exist, even in the eastern portion of the Pyrenees. There is no local example in the Perpignan Museum.

The Hazel-Grouse (*Bonasa betulina*) is unknown in the eastern half of the Pyrenees, and M. Maurice Gourdon of Luchon told us that in his many years' experience he had only shot one (a hen, which he showed us) and seen another.

The evidence of Ribes, the old guide at the Casino, was to the same effect; and I believe that the species is seldom to be found eastward of Gabas. I saw it once near Roncesvalles, Navarre, some years ago.

LAGOPUS MUTUS (Montin).

The snow on the Col de Puymorens was freely marked by the feet of Ptarmigan, and we were told by the postman of Ribas that birds were often seen on the Col de Tosas in cold weather and in the early morning, but "not when the diligence passed: *that* was far too late in the day." On the French side the usual name for the Ptarmigan is "Gelinotte," which has led to confusion with enquirers, who have applied that name to the Hazel-Grouse.

PERDIX CINEREA, Latham.

Everywhere the evidence was to the effect that the Grey Partridge is confined to the higher regions, not much below Ptarmigan-ground. We would not sanction shooting this species in the breeding-season, and we did not actually see it, but birds were calling at about 5500 ft. as we descended from the Lac de Comté.

CACCABIS RUFA (L.).

The Red-legged Partridge was flushed among the rugged ground near Banyuls, just above the Raven's nest, and several birds were seen on the road to and from Cadaqués. No confirmation of the reported existence of *C. saxatilis* was obtained.

COTURNIX COMMUNIS, Bonnaterre.

The Quail was heard in the Vallée de Lys and elsewhere, in the vicinity of Luchon.

ÆGIALITIS CURONICA (Gm.).

The Little Ringed Plover was watched on the shingle-beds in the river Soler, near Puigcerdà, where it was evidently breeding.

TRINGOÏDES HYPOLEUCUS (L.).

The Common Sandpiper was noticed on the Fresér river between Ripoll and Ribas; while on the French side it was not uncommon around Ax.

TOTANUS CALIDRIS (L.).

The Redshank was identified along the margins of the *étangs* bordering the Mediterranean.

LARUS CACHINNANS, Pall.

On the *étangs* and the Mediterranean coast.

LARUS FUSCUS, L.

An immature example examined in the flesh at Banyuls.

PUFFINUS YELKOUAN, Acerbi.

At Banyuls an individual of this representative of our Manx Shearwater was handled in the flesh.

VIII.—*Notes on Birds observed on the Yenisei River, Siberia, in 1895.* By H. LEYBORNE POPHAM.

I LEFT England on March 8th, 1895, with the object of adding something, if possible, to what is known of the birds frequenting the mighty Yenisei River. I was accompanied by Mr. C. Boyce Hill, and by the mate of my yacht (McGarry) as bird-skinner. In spite of a letter from the Russian Embassy in London, our guns were taken away at the frontier, and did not reach Moscow till ten days later. This delay almost proved fatal to our chance of reaching Yeniseisk by sledge, as when we arrived at the end of the railway at Omsk, on March 28th, the snow had almost disappeared. However, after dragging the sledges sometimes through water and sometimes over the bare ground, with at times as many as five horses to each sledge, we eventually, on April 15th, arrived, in the relics of our "pavoskas," at Yeniseisk. Here we were most hospitably entertained by the mayor of the town, Mr. Vostrotine, for seven weeks, waiting for the break-up of the ice and the departure of the first trading steamer down the river. We occupied our time in the purchase and fitting-out of a "lodka," a sort of flat-bottomed house-boat, and in collecting a few specimens of the birds as they arrived from the south. On June 7th we tied our boat on behind a long string of barges, and were

off down stream, and for a month were hard at work collecting specimens of birds and eggs in every place at which our steamer stopped for fuel, skinning birds and blowing eggs while under way, and sleeping whenever a chance occurred. On the fifteenth day of our voyage the sun ceased to set and remained above the horizon for the next seven weeks, so that we were able to make the best use of our time whenever stopping at any "village," which sometimes consisted of only two or three huts. It often happened that we only got about two hours ashore at what appeared to be a particularly good spot for birds, but we had to take our chance of this; however, I think, on the whole, we were fairly lucky. But we failed in the Warblers—a class that neither of us was well up in—and I believe we often overlooked a very interesting small Warbler when in pursuit of something larger and more attractive to us. We also made a mistake in not forming a larger collection during the migration at Yeniseisk, instead of husbanding our ammunition for our voyage down the river. Its course throughout being northerly, we were constantly changing our latitude, meeting new species and leaving others behind at every stoppage. Thus some birds that we might easily have obtained at Yeniseisk we never met with again further down. We reached Golchika on July 7th in tow of our steamer, this being the last village on the river, and had to spend two somewhat dreary months amongst millions of mosquitoes in our small craft, awaiting the arrival of the expedition from England sent out by my brother through the Kara Sea. The monotony of this time was relieved only by ten very pleasant days spent on board the Russian surveying steamer 'Oftsin,' the officers of which very kindly invited us to accompany them on an expedition to set up a beacon on Cape Matte Sale. Ice prevented us from carrying out this object, but though we were of course too late for eggs, we were enabled to add several good species to our list, the young in down of Bewick's Swan being one of the most interesting. The s.s. 'Lorna Doone' arrived from England on September 13th accompanied by a river steamer, the 'Barnaoul,' and

nine days later we started homeward on what turned out to be a rather adventurous voyage. Capt. Wiggins, who had brought out the two ships, took nearly all the coal and stores with him up the river, leaving us with a supply of about ten days' fuel to reach Vardö. Things went well till the fourth day out, when we fell in with vast quantities of ice, through which we forced our way for five days. We then got set fast in the ice at the eastern entrance of the Ugor Straits, having broken both blades of the propeller and used up every available plank for the furnaces; even the hen-coop had gone up the funnel. The vessel drove steadily away with the ice in a north-easterly direction till October 4th, when I decided it was time to seek assistance from the natives in the form of food and clothing. I therefore left the ship with three of the crew and a Russian, who had come on board when we were near the entrance of the Straits, and struck out for the land, which could now just be made out from aloft, hauling a boat with us over the ice. After suffering considerably from the cold and exposure in our European clothes during a gale of wind and snowstorm we reached a native "choom" on the evening of the second day, and travelled home with the natives *viâ* the Pechora and Mezen. This same gale of wind broke up the ice sufficiently to release the 'Lorna Doone,' and she eventually reached England in safety, happily not requiring the supply of reindeer meat and skins that we had gone in search of.

I now give my notes on the birds that we met with on the Yenisei.

†1. *TURDUS ILIACUS*. Redwing.

Very numerous in the forest, often nesting among the large colonies of Fieldfares, but nearly always at a lower elevation.

2. *TURDUS PILARIS*. Fieldfare.

The commonest of all the forest-birds, colonies of several hundreds inhabiting the willows on nearly all the islands; we could have almost loaded our boat with their eggs if we had felt inclined.

3. *TURDUS FUSCATUS*. Dusky Thrush.

(*T. dubius*, Dresser, B. Europe, ii. pl. 7, p. 63.)

Wishing one day to obtain a thoroughly authentic clutch of Redwings' eggs, I shot the parent bird, and was surprised to find it was not an ordinary Redwing as I had thought, but a specimen of *T. fuscatus*. I secured the two eggs from the nest, which was exactly like a Fieldfare's, with a lining of mud and a final lining of dry grass. We afterwards obtained several more nests with eggs belonging to the Dusky Thrush, all being of necessity placed rather low down, but one was quite on the ground between the stems of a willow. This species extended further north than either of the preceding, even beyond the limit of the forest. The eggs are mostly of the Redwing type, and measure from 1.01 to 1.1 inch in length and .8 in breadth. One clutch of six eggs was more clearly spotted than the others.

4. *TURDUS OBSCURUS*. Pale Thrush.

We were unfortunate in obtaining only one specimen of this Thrush on the Kamina Tungoska River, and still more so in not finding any eggs.

5. *TURDUS SIBIRICUS*. Siberian Thrush.

This handsome bird was often to be seen perched on the top of a tree, whistling a few rich notes, but owing to its extreme wariness it was difficult to approach within shot, and it was only by careful stalking that we managed to obtain three skins, all of males. It was most numerous around Toorukhansk (lat. 66° N.). We got several nests supposed to belong to this species, but we were never able to thoroughly identify the eggs further than seeing the birds in the immediate vicinity of the nest. These eggs differ very much from those of *T. dubius*, having a paler blue ground-colour and more distinct spots of reddish brown. They measure 1.16 in. by .82 in.

6. *SAXICOLA ÆNANTHE*. Common Wheatear.

Fairly numerous; one was obtained at Yeniscisk and two at Golchika.

7. *PRATINCOLA MAURA*. Eastern Stonechat.

A male was shot about the middle of May at Yeniseisk, but they were not seen afterwards.

8. *CYANECULA SUECICA*. Red-spotted Bluethroat.

Common. A few were seen near the end of August at Golchika. Several well-concealed nests were found in the forest.

9. *CALLIOPE CAMTSCHATKENSIS*. Ruby-throated Warbler.

It seemed a cruel thing to put an abrupt end to a beautiful song proceeding from this lovely little Warbler, which was singing away lustily from the top of a willow. This was the only one I saw.

10. *SYLVIA AFFINIS*. Siberian Lesser Whitethroat.

Two nests, near Yeniseisk, were discovered with one and five eggs respectively, both placed low down in a small bush and lined with hair; the hen bird was shot from the nest containing five eggs.

11. *PHYLLOSCOPUS TRISTIS*. Siberian Chiffchaff.

I often heard these Chiffchaffs in the forest. I saw one come out of its domed nest and shot it, but was disappointed to find the nest empty, though lined with feathers all ready for the eggs.

12. *PHYLLOSCOPUS TROCHILUS*. Willow-Warbler.

Six eggs were taken from the only nest found, which was placed on the ground at the foot of a very small bush and full of white feathers.

13. *ACROCEPHALUS SCHÆNOBÆNUS*. Sedge-Warbler.

One, a male, was shot, but no eggs were obtained.

14. *ACCENTOR MONTANELLUS*. Mountain-Accentor.

Not uncommon in the forest, as we obtained six nests containing in all 22 eggs, varying from one to six eggs in each nest. The eggs cannot be distinguished from those of the common Hedge-Sparrow (*A. modularis*), the song also being very similar. The nest was sometimes placed as high as eight feet from the ground in the fork of a willow, and at others quite low down in the stump of a

dead tree, and composed of small twigs and dry grass lined with moss and a few hairs. We met with this bird between the latitudes 66° and 69° N.

15. *PARUS MAJOR*. Great Tit.

On our sledge journey to Yeniseisk we often saw Great Tits at the villages, also at Omsk and Yeniseisk.

16. *MOTACILLA ALBA*. White Wagtail.

This was one of the first of the migrants to arrive at Yeniseisk, and one of the last birds seen at Khabarova in the Ugor Straits. We took seven eggs from a nest made in the cabin of a boat hauled up on the shore at Yeniseisk. We met with it as far down as Golchika, but in far less numbers than the following.

17. *MOTACILLA CITREOLA*. Yellow-headed Wagtail.

Very common all the way down the river. A large flock made their first appearance at Yeniseisk on May 19th, and we were constantly coming across their nests afterwards.

18. *MOTACILLA MELANOPE*. Grey Wagtail.

On May 18th three appeared at Yeniseisk, and later on I secured a specimen there, but that is all we saw of them.

19. *ANTHUS GUSTAVI*. Pechora Pipit.

I shot a Pipit, then unknown to me, on June 20th, which proved to be the Pechora Pipit.

+20. *ANTHUS CERVINUS*. Red-throated Pipit.

Quite the commonest bird on the tundra, above the limit of trees. Many clutches of eggs were taken. The eggs show considerable variation, one in particular being of quite a dark coffee-colour.

21. *ANTHUS TRIVIALIS*. Tree-Pipit.

A solitary example was obtained at Yeniseisk.

22. *ORIOUS GALBULA*. Golden Oriole.

A pair were seen in the forest near Yeniseisk, and a specimen was secured from a small flock of these brilliant birds a couple of days afterwards.

†23. *HIRUNDO RUSTICA*. Swallow.

Swallows arrived at Yeniseisk on May 30th, but did not appear to extend further down the river.

24. *CHELIDON LAGOPODA*. Siberian Martin.

All the many church-towers in Yeniseisk were covered with old Martins' nests, to which the birds returned on May 18th. We caught several of these birds on their nests under the eaves of the houses in the villages. The upper tail-coverts were in all cases pure white. We were too early for eggs, as we left the birds all behind us after passing Toorukhansk.

25. *COTILE RIPARIA*. Sand-Martin.

The banks of the river at Yeniseisk were riddled with the holes of these birds. The first one I saw was on May 21st.

26. *FRINGILLA MONTIFRINGILLA*. Brambling.

Fairly numerous, though two nests were all we came across, with six and seven eggs in each.

27. *LINOTA LINARIA*. Mealy Redpoll.

Common. Several nests were found.

28. *LINOTA EXILIPES*. Coues's Redpoll.

The first specimens obtained at Yeniseisk were three out of a flock of about fifty of these Redpolls. I was unaware at the time that the other Redpolls and nests found later on might have belonged to *L. exilipes* and not to *L. linaria*. I shot only one from its nest, and this one turned out to be *L. linaria*, so I rather hastily concluded that all were; but as Mr. Henry J. Pearson tells us the eggs are indistinguishable, I have no proof that Coues's Redpoll nests on the Yenisei.

29. *CARPODACUS ERYTHRINUS*. Scarlet Grosbeak.

Only one was seen and secured at Toorukhansk.

30. *PINICOLA ENUCLEATOR*. Pine Grosbeak.

I pursued one near Yeniseisk for some time but failed to get it.

31. *EMBERIZA AUREOLA*. Yellow-breasted Bunting.

These birds appeared in flocks at Yeniseisk on June 1st, and were never met with again.

32. *EMBERIZA PUSILLA*. Little Bunting.

We obtained a nice series of the beautiful eggs of this Bunting, which show great variation in size, ground-colour, and markings. The birds were by no means uncommon, and were remarkably tame at their nests, returning to their eggs at once if we withdrew a few yards from the spot, so that there was never any difficulty in satisfactorily identifying their eggs after we had shot one or two birds to make certain. Six nests were discovered, the greatest number of eggs in one nest being five.

33. *EMBERIZA SCHÆNICLUS*. Reed-Bunting.

Locally common. One nest was on the top of a dead stump of a tree about 4 ft. high. All the others were on the ground.

34. *CALCARIUS LAPPONICUS*. Lapland Bunting.

Shared the nesting-grounds of the Red-throated Pipit, and almost rivalled its reputation of being the commonest bird on the tundra. These Buntings passed through Yeniseisk on migration, but did not appear again till we were clear of the limit of trees. Their nests can easily be distinguished from the Pipits' by the lining of feathers.

35. *PLECTROPHENAX NIVALIS*. Snow-Bunting.

Not observed on the river between Yeniseisk and Golchika, where they were busy feeding their young when we arrived.

36. *OTOCORYS ALPESTRIS*. Shore-Lark.

We saw the first Shore-Lark in lat. 70° N., but did not get any eggs.

+ 37. *STURNUS VULGARIS*. Starling.

Arrived very early at Yeniseisk.

38. *PICA RUSTICA*. Magpie.

Our first nest was a Magpie's, before the snow was off the ground.

39. *CORVUS CORONE*. Carrion-Crow.

Numerous about the town of Yeniseisk.

40. *CORVUS CORNIX*. Hooded Crow.

It was interesting to observe on our sledge journey from Omsk to Yeniseisk how the Hooded Crow was gradually replaced by the Carrion-Crow as we proceeded east, with a space, somewhat beyond Tomsk, where the two overlap one another and hybrids predominate. The Grey Crow was quite scarce at Yeniseisk compared with *C. corone*.

41. *CORVUS FRUGILEGUS*. Rook.

Rooks had reached Omsk before the end of March.

42. *CAPRIMULGUS EUROPÆUS*. Nightjar.

C. B. Hill shot one at Yeniseisk.

43. *PICUS MAJOR*. Great Spotted Woodpecker.

Only one was obtained near Yeniseisk.

44. *PICUS PIPRA*. Siberian Lesser Spotted Woodpecker.

A single specimen secured on our third day's journey down the river was the only one seen.

45. *PICOIDES TRIDACTYLUS*. Three-toed Woodpecker.

Again only a solitary example was shot by Hill near Toorukhansk.

46. *CUCULUS CANORUS*. Cuckoo.

Seebohm, in his 'Siberia in Asia,' tells us that he secured a Cuckoo making a sound not unlike the cry of the Hoopoe, and found it to be the Himalayan Cuckoo (*Cuculus himalayanus*). We often heard Cuckoos uttering the sound that he describes, and shot two, which were pronounced by Mr. H. E. Dresser (who has been kind enough to examine the skins we brought back) to be *C. canorus*. The forest round Yeniseisk was full of Cuckoos, but we soon left them behind us; in fact I find no mention of them in my notes further north.

47. *ASIO OTUS*. Long-eared Owl.

While waiting for Ducks at flight-time, two of these Owls flew round, making a strange noise by striking their wings together. We obtained one nest of six eggs.

48. *ASIO ACCIPITRINUS*. Short-eared Owl.

This was the commonest Owl; we found two of its nests.

+49. *NYCTEA SCANDIACA*. Snowy Owl.

We did not see so many Snowy Owls as we expected, considering there was a large supply of lemmings on the tundra. There was nothing like the number that I saw on Waigatz Island last year. One day, near Golchika, we saw two, and after a careful stalk we each shot one, but could not find any signs of a nest, though, from the "incubation spot" on the hen bird, they had evidently bred.

50. *CIRCUS ÆRUGINOSUS*. Marsh-Harrier.

A fine bird passed close to us near Yeniseisk, and we several times saw Harriers that we concluded were *C. æruginosus*.

51. *BUTEO DESERTORUM*. African Buzzard.

One nest was found near Yeniseisk, and the male bird shot.

+52. *BUTEO LAGOPUS*. Rough-legged Buzzard.

The commonest of the large birds of prey beyond the forest; their nests, of which we found six, containing from four to six eggs in each, were always easily accessible on the banks of the river.

53. *MILVUS MIGRANS*. Black Kite.

In the forest, when nearing Yeniseisk, a large fork-tailed bird flew over us, which we concluded was a Black Kite, but we saw none on the river.

54. *FALCO PEREGRINUS*. Peregrine.

Almost as common as the Rough-legged Buzzard on the lower parts of the river. All the nests were reached without any difficulty owing to the character of the country: they had merely chosen the steepest of the cliffs on the river-banks. I kept a pair of young ones for some weeks; the male became very tame, but the female remained fierce, till both were released, owing to the difficulty of supplying them with fresh food.

55. *FALCO SUBBUTEO*. Hobby.

Three were shot at Yeniseisk, but no eggs found.

+ 56. *FALCO ÆSALON*. Merlin.

One was shot from the ship at Golchika in the autumn. I shot several from our ship while at anchor in the Ugor Straits in the summer of 1894.

57. *FALCO VESPERTINUS*. Red-legged Falcon.

Quite a colony of these pretty little Falcons was nesting near Yeniseisk.

+ 58. *FALCO TINNUNCULUS*. Kestrel.

I shot one at Yeniseisk, thinking it might be the Lesser Kestrel.

59. *BOTAURUS STELLARIS*. Bittern.

A man gave me a freshly-killed Bittern at Yeniseisk, but we did not see live examples ourselves.

+ 60. *ANSER SEGETUM*. Bean-Goose.

The most numerous of the Geese. The first seen were on May 6th, migrating north. One nest contained as many as six eggs, another five.

+ 61. *ANSER ALBIFRONS*. White-fronted Goose.

Not nearly so plentiful in this country as the preceding. Out of ten captured on Aug. 15th while in moult, three were White-fronted, and out of eighteen procured in the same way a few days later only two proved to be *A. albifrons*. We brought back only three eggs and one gosling in down. Seeböhm, in his 'Siberia in Asia,' only mentions the Lesser White-fronted Goose on the Yenisei.

+ 62. *BERNICLA BRENTA*. Brent Goose.

Not observed south of lat. 72° N., where young in down were obtained.

63. *BERNICLA RUFICOLLIS*. Red-breasted Goose.

The eggs of this Goose formed one of our chief prizes. Four nests were found with seven, seven, eight, and nine eggs (of a creamy-white colour) in each respectively. From

all the nests the female was shot. All the nests were placed at the foot of a cliff occupied by either a Peregrine or a Rough-legged Buzzard (possibly for protection from foxes), and well supplied with down.

Measurement of eggs: 2.79 in. by 1.93 in.

64. *CYGNUS BEWICKI*. Bewick's Swan.

So far as we were able to ascertain, all the Swans on the river were of this species. Although we saw at times many hundreds of Swans on our passage down the river, we never succeeded in shooting one or in finding a nest, but after a long and exciting chase I secured three young Bewick's Swans in down in about 72° N. lat. I was unable to bring down the old birds, having only a 28-bore gun loaded with half charges of small shot.

+65. *ANAS BOSCAS*. Mallard.

Rare. Only one was shot (at Yeniseisk).

+66. *QUERQUEDULA CRECCA*. Teal.

Fairly numerous up to 66° N. Two nests were found.

67. *QUERQUEDULA CIRCIA*. Garganey.

Four or five pitched among my wooden decoys one evening while fighting at Yeniseisk, and I secured a specimen.

+68. *DAFILA ACUTA*. Pintail.

Common all the way down the river, and nesting on the banks.

+69. *MARECA PENELOPE*. Wigeon.

This was the most numerous of the Ducks on the river, but did not appear to extend so far north as *D. acuta*. Many nests of it were found.

+70. *FULIGULA MARILA*. Scaup.

Several were observed, and a few nests found; one of these containing six eggs, of which some were tinged with buff and the others with green.

71. *FULIGULA CRISTATA*. Tufted Duck.

Hill shot one male of this species near Toorukhansk.

72. *CLANGULA GLAUCION*. Goldeneye.

Locally common. One egg taken out of a specimen.

73. *HARELDA GLACIALIS*. Long-tailed Duck.

This Duck became very numerous after we had left the forest.

74. *SOMATERIA MOLLISSIMA*. Eider.

Only seen in the very lowest parts of the river that we visited, and then not in great numbers. No eggs were obtained.

+75. *SOMATERIA SPECTABILIS*. King-Eider.

One male was shot by Hill at Golchika, and a nest, supposed to belong to this species, was found, but no eggs were in it when discovered, and it was subsequently deserted.

76. *CEDEMIA NIGRA*. Scoter.

Common at Toorukhansk. Eggs were obtained by navigating a piece of ice to an island in a lake.

77. *CEDEMIA FUSCA*. Velvet Scoter.

A pair was seen on a lake at Doodinka, lat. 69° N. (about).

+78. *MERGUS SERRATOR*. Merganser.

Scarce.

79. *LAGOPUS RUPESTRIS*. Rock-Ptarmigan.

We often saw Ptarmigan, mostly wild single birds, while on the river, and in flocks on the sledge journey homeward, but whether they were *L. rupestris* or *L. albus* I cannot say. The only two obtained (killed near Golchika) were *L. rupestris*. We found no eggs.

80. *TETRAO TETRIX*. Black Grouse.

Numerous on the journey to Yeniseisk, but I saw only one, on the Koorayika River, after leaving that town.

+81. *CREX PRATENSIS*. Land-Rail.

Corn-Crakes were heard only at Yeniseisk for the first time on June 3rd.

82. *GRUS COMMUNIS*. Crane.

Cranes were seen migrating north at Yeniseisk, and one was stalked near there but not obtained, although knocked over by Hill.

+83. *CHARADRIUS PLUVIALIS*. Golden Plover.

Not observed during migration at Yeniseisk, but fairly plentiful on the tundra, where eggs were obtained.

+84. *CHARADRIUS FULVUS*. Eastern Golden Plover.

More numerous than the preceding; passes through Yeniseisk on migration. The difference in their call makes it quite easy to distinguish them from our bird (*C. pluvialis*) when searching for eggs. These are of a paler ground-colour than those of either *C. pluvialis* or *Squatarola helvetica*, and measure 1.96 in. to 2.04 in. by 1.33 in.

+85. *SQUATAROLA HELVETICA*. Grey Plover.

Somewhat unexpectedly (since Seebohm had not reported them from these parts) we came across Grey Plovers nesting near Golchika, and, after considerable trouble and annoyance from the inevitable mosquito, we succeeded in watching four birds on to their nests, which contained four, four, four, and one egg and two young in down just hatched, respectively. The eggs measure 2.05 in. by 1.47 in.

+86. *ÆGIALITIS HIATICULA*. Ringed Plover.

Common on the stony parts of the high-lying tundra.

+87. *EUDROMIAS MORINELLUS*. Dotterel.

Only met with in small flocks on one of the islands about 72° N.

+88. *STREPSILAS INTERPRES*. Turnstone.

Sibiriakoff Island (lat. 72° 30' N.) was the first place where we secured a Turnstone, but we afterwards saw one or two at Golchika. No nests were found, as this place is apparently too far south for them.

+89. *HÆMATOPUS OSTRALEGUS*. Oyster-catcher.

Only one pair seen on the third day after leaving Yeniseisk.

90. PHALAROPUS HYPERBOREUS. Red-necked Phalarope.

Very numerous, especially at Golchika, where eggs and young in down were taken.

91. PHALAROPUS FULICARIUS. Grey Phalarope.

We had not expected to find these birds, as they were not observed by Seebohm, and still less to discover a nest with four eggs at Golchika. These are somewhat larger than those of *P. hyperboreus*, measuring 1.26 in. by .89 in. The male was shot from the nest.

92. GALLINAGO MAJOR. Double Snipe.

Certain swampy places in the forest seemed full of these Snipes, but only two clutches of their handsome eggs were found, both in dry places among the trees.

+93. GALLINAGO CÆLESTIS. Common Snipe.

Not so common as the preceding.

94. GALLINAGO STENURA. Pin-tailed Snipe.

I shot a bird (female), apparently from her nest, as she fluttered over the ground before me, but I failed to find the nest after a careful search.

+ 95. TRINGA ALPINA. Dunlin.

Not seen south of lat. 71° N., where young in down just hatched were found. Numerous, and breeding at Golchika, but we were too late for eggs.

96. TRINGA MINUTA. Little Stint.

Passes through Yeniseisk on the spring migration; did not occur again till lat. 71° N. was reached; here young in down were captured. Eggs and more downy young were afterwards found at Golchika, where the birds were fairly numerous and extremely tame. The eggs we obtained differed a good deal from those of the following species, being of a much darker buff ground-colour and slightly smaller (1.21 in. by .81 in.). Two females were shot from their nests.

97. TRINGA TEMMINCKI. Temminck's Stint.

Breeds further south than *T. minuta*, and is more numerous. It did not appear to pass Yeniseisk in the spring.

Many nests were taken, chiefly in open spaces not far from the river. Two males and one female were shot from their eggs.

+98. *TRINGA SUBARQUATA*. Curlew-Sandpiper.

If it had not been for the kindness of Professor Vilkitski, who invited us to accompany the expedition to Cape Matte Sale, I should not have been able to add this interesting bird to my list, as it was only when we reached lat. 72° 30' N. that we obtained specimens, which showed hardly any traces of summer plumage, early in August.

+99. *MACHETES PUGNAX*. Ruff.

Common, particularly at Golchika.

+100. *CALIDRIS ARENARIA*. Sanderling.

Not observed south of Golchika, but fairly plentiful further north.

101. *TOTANUS HYPOLEUCUS*. Common Sandpiper.

Several seen at Yeniseisk, and a good many at one place a few days' journey down the river.

+102. *TOTANUS OCHROPUS*. Green Sandpiper.

Four specimens were procured at Yeniseisk, but neither birds nor eggs were seen afterwards.

103. *TOTANUS GLAREOLA*. Wood-Sandpiper.

It has been generally supposed that the Green Sandpiper stands alone in deviating from the nesting-habits of other Waders; but I am afraid I have spoilt its reputation, as, out of five nests of the Wood-Sandpiper found, only one was in its usual position, on the ground. There could be no doubt about one of them, as I shot the bird while sitting on its eggs in an old Fieldfare's nest, and luckily did not break the eggs. I can only imagine that it departs from its usual habit owing to the abundance of old nests available. All the birds shot from their nests were males.

104. *TOTANUS FUSCUS*. Spotted Redshank.

An immature one was shot by Hill at Golchika.

-105. *TOTANUS CANESCENS.* Greenshank.

Only one (female) was seen and shot by me near the Tungoska river.

106. *TEREKIA CINEREA.* Terek Sandpiper.

By far the noisiest as well as the commonest of the Sandpipers. We found numerous nests, and could have taken many more eggs if we had wished. The birds seemed to prefer dry nesting-grounds in the forest, and did not extend north much beyond the limit of trees. They roost at night on boughs overhanging the water of the lakes. The bird shot from its nest was in every case the male.

107. *LIMOSA LAPPONICA.* Bar-tailed Godwit.

A bird in full summer plumage, picked up dead at Toorukhansk, first gave us hopes of coming across these birds breeding on the Yenisei, and we subsequently found them fairly plentiful between lat. 69° N. and 72° N., no two pairs occupying the same district while nesting. The nest is extremely difficult to find, being only a slight hollow on a vast expanse of high-lying tundra. Both birds take part in the incubation of the four eggs, but I have found the male on the nest on three out of four occasions on which I have been near a nest. One bird sits very close, while the other meets the intruder at least a mile from the nest, and never leaves him till he is well clear of the neighbourhood, keeping up an incessant screaming, both when standing on the ground and when flying round. The nests were found on June 27th and July 3rd, and were in each case in the vicinity of one belonging to a pair of Buffon's Skuas. It is impossible to watch Godwits to their nests like one can Grey Plovers, as in the latter case the sitting bird instantly leaves the nest on the appearance of a stranger, and can be watched till it returns, but the sitting Godwit sticks to its eggs till it can be almost caught in the hand, well knowing that in the resemblance of its back to the surroundings lies its best chance of escaping observation. This Godwit, like many other Waders, occasionally perches upon tree-stumps. Our eggs measure 2.06 in. by 1.5 in.

+108. NUMENIUS ARQUATA. Curlew.

At Yeniseisk two birds flew over which appeared to be Curlews.

+109. STERNA MACRURA. Arctic Tern.

Seen at Yeniseisk and at various places above the forest limit. On one occasion I shot a Tern very much resembling the Arctic Tern, but with a black bill; it unfortunately fell in a lake full of weeds. It did not appear to be an immature bird.

+110. PAGOPHILA EBURNEA. Ivory Gull.

Not observed on the Yenisei, but at the eastern entrance to the Ugor Straits several were to be seen fishing in the patches of open water amongst the ice. All were immature birds, more or less spotted on the back and wings.

+111. LARUS CANUS. Common Gull.

The only Gull observed in the forest district, where it sometimes perches upon the tops of dead trees. One was shot having a plain yellow beak without the greenish base.

112. LARUS FUSCUS. Lesser Black-backed Gull.

One immature bird (probably in the second year's plumage) was shot at Golchika [identified, H. S.].

+113. LARUS AFFINIS. Siberian Herring-Gull.

This species, in my humble opinion, should rather be called the Siberian Lesser Black-backed Gull, as it more nearly resembles *L. fuscus* than *L. argentatus*. It is by far the commonest Gull on the lower reaches of the river, nesting in colonies, mostly on small grassy islands in lakes, occasionally on dry ridges in swampy ground. We obtained a good series of their eggs, which varied considerably, and also specimens in various stages of plumage, from the young in down to the mature bird. The eggs measure: 2.66 to 3 in. by 1.8 to 2.05 in.

+114. LARUS MARINUS. Greater Black-backed Gull.

While steaming north in the s.s. 'Oftsin,' from Golchika, I saw Gulls which I am confident were Greater Black-backs;

their greater size and quite black backs and wings, compared with the grey of *L. affinis*, were easily distinguishable when the two were flying round the stern of the vessel together.

+115. *LARUS GLAUCUS*. Glaucous Gull.

First seen on our trip in the s.s. 'Oftsin,' a nest and young in down being found on a small sandbank near Sibiriakoff Island; the young birds were taken on board ship by the sailors and soon became very tame. The commonest Gull in the Kara Sea.

-116. *STERCORARIUS POMATORHINUS*. Pomatorhine Skua.

It was only on one of the many islands visited that we were lucky enough to come across many of these birds nesting. Several pairs were scattered over a large marsh, which would have been quite impassable if it had not been for the ice a couple of feet below; but the possibility of discovering these rare eggs encouraged us to toil on, with the reward of finding two nests. A third nest was afterwards found by Hill on the mainland, and a good many birds were seen at Golchika later in the season. Our eggs measure from 2.35 in. to 2.65 in. by 1.79 in. to 1.86 in.

-117. *STERCORARIUS CREPIDATUS*. Richardson's Skua.

A few were seen at Golchika, and one nest found belonging to a bird of the light form, which was the only form observed.

-118. *STERCORARIUS PARASITICUS*. Buffon's Skua.

This Skua must have increased since Seeböhm's visit in 1877, as he only once mentions having seen any, whereas we found them plentiful at almost every place that we stopped at above the forest, and often found a nest, at which the birds were very bold, sometimes striking us with their wings, and when once the nest was found the parent bird would return to it if we withdrew only a few yards.

+119. *FULMARUS GLACIALIS*. Fulmar.

On our return voyage through the Kara Sea, a Fulmar appeared in lat. 74° 8' N. and long. 77° 40' E.

—120. *COLYMBUS ARCTICUS*. Black-throated Diver.

Fairly numerous; eggs were taken at Golchika only, though several pairs were seen on the lakes in the forest.

—121. *COLYMBUS SEPTENTRIONALIS*. Red-throated Diver.
Common; preferring the small lakes for nesting.

We were constantly on the look-out for *Colymbus adamsi*, but did not see one. The natives seemed to know it, and told us it nested at the lakes, far away on the tundra.

IX.—*Bulletin of the British Ornithologists' Club.*

Nos. XXXVIII. & XXXIX.

No. XXXVIII. (October 31st, 1896.)

THE thirty-seventh Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 21st of October, 1896.

Chairman: P. L. SCLATER, F.R.S.

Members present:—BOYD ALEXANDER, E. BIDWELL, J. L. BONHOTE, PHILIP CROWLEY, W. E. DE WINTON, DR. F. D. DREWITT, E. A. S. ELLIOT, JOHN GERRARD, W. GRAHAM, W. R. OGILVIE GRANT, G. H. CATON HAIGH, J. E. HARTING, OSWIN A. J. LEE, MAJOR A. P. LOYD, P. H. MUNN, R. NESHAM, C. E. PEARSON, H. J. PEARSON, F. PENROSE, T. DIGBY PIGOTT, C.B., HOWARD SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), W. B. TEGETMEIER, MAJOR HORACE TERRY, N. F. TICEHURST, H. M. WALLIS, JOHNSON WILKINSON, LIONEL P. WILLIAMS, C. A. WRIGHT.

Visitors: H. TABOR BROOKS, DR. CROSSE, J. EARDLEY HILL, R. H. HUNTER, DR. TRAQUAIR.

The Treasurer announced that the Members of the Club were now 117 in number.

Mr. FRANK PENROSE was elected on the Committee, in place of Mr. P. Crowley, who retired by rotation. Mr. P. L. SCLATER was unanimously elected Chairman, and Messrs. P.

CROWLEY and W. GRAHAM were appointed Vice-Chairmen for the present Session.

The Chairman gave his annual Address to the Club, and made the following remarks :—

“ On commencing the proceedings of the Fifth Session of the British Ornithologists' Club, I cannot refrain from offering a few preliminary remarks on the flourishing condition of our Association. It has increased in number regularly year by year, and now embraces, with very few exceptions, the most active and energetic Members of the British Ornithologists' Union. I think that the founders of the Club may be well congratulated upon the undoubted success which, in the face of some sinister prophecies, has attended their efforts.

“ Passing on to other topics, I must first call your attention to the very serious losses that have occurred in the ranks of Ornithology since I had the honour of addressing you a year ago. The deaths of Lord Lilford and Mr. Seebohm have made vacancies which it will be hard indeed to fill up. I need not on the present occasion attempt to speak of the events of their lives, which have been treated of elsewhere; but I will remind you that both of them worked up to almost the last moments of their existence, and left behind them publications unfinished at the times of their decease. Lord Lilford's excellent ‘Coloured Illustrations of the Birds of the British Islands’ was nearly at its termination when the death of the author took place. We are pleased to know that some well-qualified friends have arranged to do the little that is necessary to render these beautiful volumes complete. As regards Mr. Seebohm's work on British Birds' Eggs, which was announced to be in preparation some time ago, we are glad to learn that Dr. Bowdler Sharpe has completed it for publication, and this, we are told, has not been a difficult task. The same, however, is not likely to be the case with Seebohm's ‘Monograph of the Thrushes,’ which the energetic Editor of our ‘Bulletin’ is likewise prepared to see through the press. Although the plates of this work, as we under-

stand, have mostly been already drawn and coloured under Seebohm's superintendence, I fear that in this case, as regards the letterpress, the Editor will have a long and by no means easy task to perform.

"Passing on to other ornithological publications which have been issued since the commencement of our last Session, I may point out that three additional volumes of the British Museum Catalogue of Birds, which, when I spoke to you last year, I alluded to as being nearly ready, have all been published, and that volume xxvi. (to contain the Herons, Pelicans, Grebes, Divers, and Penguins) is now only required to complete this most important work. Captain Shelley's first volume of his work on African ornithology has also been published. Other important ornithological works lately brought out are the new edition of Mr. Ridgway's 'Manual of North-American Birds' and Dr. Mivart's beautifully illustrated 'Monograph of the Lories.'

"As regards ornithological books in course of preparation or in contemplation (besides the posthumous works of which I have already spoken), I am pleased to say that the Index to the 4th, 5th, and 6th series of 'The Ibis' (1877-94) is making good progress, the first portion of it being already in type. Mr. Beddard has been hard at work on his 'Anatomy of Birds' all the year, and hopes to have it ready for the press in 1897. Mr. Joseph Whitaker is projecting a volume on the Birds of Tunis, in which he will put together the results recently achieved by himself and other collectors in that interesting district of North Africa.

"Perhaps the most remarkable event in ornithology that has lately been divulged to us is the characterization of the gigantic bird of the *Diprotodon*-beds of South Australia, which, as announced in the last number of 'The Ibis,' Dr. Stirling has named *Genyornis newtoni*. We are not yet in possession of a full account of this extinct monster, but have only been told that it is, in fact, a gigantic Emu, just as the *Diprotodon* of the same epoch is an exaggerated Kangaroo. As regards extinct birds, we may also rejoice that (as already announced in 'The Ibis') the Trustees of the

British Museum have acquired for this country the whole collection of remains of the so-called Order Stereornithes got together by Dr. Ameghino, of Buenos Aires. The study of these fossils, which has been assigned to Mr. Andrews, of the Geological Department of the British Museum, will, we have no doubt, throw a flood of light upon the real relations of this series of remains of a former bird-world, which has been recently revealed to us.

“Now, and lately, as is usual, a large number of British ornithologists are scattered over the earth’s surface, some temporarily, others as quasi-permanent residents. As shown by Mr. Ogilvie Grant in the last number of ‘*The Ibis*,’ Mr. Whitehead is continuing his most successful investigations in the highlands of the Philippine group, while Mr. A. Everett has been making similar researches in the mountains of Celebes, and Messrs. Rickett and De La Touche are always busy in China. Mr. Alexander Whyte (Sir Harry Johnston’s naturalist at Zomba) has lately carried out a most successful foray into the Nyika plateau of Northern Nyasaland, and we may shortly expect his collections in this country, while Mr. Lort Phillips is planning another winter-expedition into the northern parts of tropical Africa. As regards the New World, our young friend Mr. Graham Kerr (the former naturalist of the abortive Pilcomayo Expedition) has departed on a scientific mission into Western Paraguay, where there is an ample field for discovery. Mr. Fitzgerald’s new expedition to ascend Aconcagua and other giants of the Andes will be accompanied by Mr. Philip Gosse, who is said to be a competent collector. In the Australian region Mr. North at Sydney, Mr. Le Souëf at Melbourne, and Mr. De Vis in Queensland are ever at work on ornithology; while in New Zealand Sir Walter Buller promises us a new and complete manual of the birds of that island-group, bringing up the subject to the present date, and in the Sandwich Islands Mr. Perkins is still hard at work among the mountains. Thus it may be truly said of the British ornithologist, as of the British engineer, that his proud motto is ‘*Ubique*.’”

Mr. OSBERT SALVIN communicated the following description of an apparently new species of American Partridge :—

†*DENDRORTYX HYPOSPODIUS*, sp. n.

D. leucophryi similis, sed corpore subtus minime rufo guttato, pectoris et hypochondriarum plumis saturate griseis, striarhachidali nigra; fronte, superciliis et gutture sordide albidis; scapularibus et secundariis extus fere unicoloribus indistincte vermiculatis, maculis majoribus cervinis nullis; pedibus, ut videtur, obscurioribus, tarsis postice fere nigricantibus. Long. tota circa 12·0 poll., alæ 5·9, caudæ 5·0, tarsi 2·0, dig. med. cum ungue 2·05.

Hab. Azalias de Cartago, Costa Rica, 8th May, 1896 (C. F. Underwood).

Mr. Underwood has recently sent to us a single male specimen of this *Dendrortyx*, which differs in several points from *D. leucophrys* of Guatemala, its nearest ally. The species has been before noticed in Costa Rica, and appears in Mr. Boucard's list (P. Z. S. 1878, p. 42) as *D. leucophrys*. His specimen was also obtained in the volcano of Cartago, in the month of May.

The Hon. WALTER ROTHSCHILD sent the following description of a new Parrot from New Guinea :—

PSITTACELLA PICTA, sp. n.

♂. Top of the head chestnut-rufous; sides of the head greyish brown; an orange-yellow collar on the hind neck; sides of neck with a chestnut-rufous spot. Above green; lower rump and upper tail-coverts deep red; back and rump with black cross-bars; wings blackish, outer webs of quills green, the primaries with yellow edges towards the tip; throat brown, with a bluish wash; under tail-coverts red; rest of underparts green; upper breast dark blue, a blue tinge along the middle of the abdomen; under wing-coverts green, bend of wing bluish. Bill bluish, tip whitish. Wing 112 mm., tail 70, culmen 15.

♀. Throat and sides of the head greenish blue, no orange-yellow collar; cross-bars above more numerous; breast yellow.

lowish, with broad black cross-bands; abdomen with indistinct yellowish and dusky cross-bars. Otherwise like the male.

Hab. Mount Victoria, in the Owen Stanley Range, British New Guinea, at elevations of from 5000 to 7000 feet.

Types in the Tring Museum.

Professor MENZBIER forwarded the description of an apparently new species of Tawny Owl from Transcaucasia, with the following remarks:—

“In the summer of 1894 a friend of mine, Mr. Willkousky, in Batum, received a nestling of an Owl in down, captured in the marsh near that town. Some time after, the Owl assumed its adult dress, which was remarkable for its very dark brown general colour, with some ferruginous marks on the scapulars; and now, after new moulting, the bird is as dark as before, and even darker, always with a white bill. At first I thought that this specimen was but a merely individual melanism of *Syrnium aluco*; but in the spring of this year I received from Mr. Willkousky a skin of another specimen coloured in the same manner as the first, which had been obtained in a vineyard in the district of Shushov. After a careful examination of this specimen, I am now convinced that this Owl belongs to a very good new species, differing from *Syrnium aluco* both in its general colour and character of markings, as may be seen from the following diagnosis. I have named the species after Mr. Willkousky:—

“*SYRNIUM WILLKOUSKII*, sp. n.

“*S. magnitudine S. aluconis*, remigibus, ut in *S. alucone*, denticulatis. Obscure fuscum, facie pedibusque fusco-atris; supra indistincte nigro striatum, subtus magis ferruginescens, striis dilutis longitudinalibus fusco-atris. Remigibus rectricibusque rufescenti-fuscis, haud transfasciatis. Collari albo vel cinereo nullo loco præsentì. Rostro albido, iridibus fusco-atris. Long. 12'' 3''', caud. 7'' 5'''.

“*Hab.* Transcaucasia.”

Dr. BOWDLER SHARPE exhibited skins of two new species of East-African birds, for which he proposed the following names:—

SERINUS FAGANI, sp. n.

S. similis S. angolensi, sed mento gulaque purè albis, minimè nigro maculatis: torque gutturali e maculis magnis nigris formata distinguenda. Long. tot. 4·2 poll., alæ 2·55, caudæ 1·35, tarsi 9·5.

CISTICOLA HINDII, sp. n.

C. similis C. terrestri, et caudâ eodem modo picturatâ, sed uropygio dorso concolori, minimè rufescente, distinguenda. Long. tot. 3·8 poll., culm. 0·4, alæ 2·1, caudæ 1·2, tarsi 0·85.

These new species were discovered at Machakos Station, in British East Africa, by Dr. S. L. Hinde. The other species represented in his collection were *Lamprocolius sycobius*, *Spreo superbus*, *Buphaga erythrorhyncha*, *Vidua principalis*, *Penthetria laticauda*, *P. eques*, *Drepanoplectes jacksoni*, *Pyromelana flammiceps*, *P. xanthomelæna*, *Lagonosticta brunneiceps*, *Hyphantornis spekii*, *Mirafrâ africana*, *Pyrrhulauda leucoparæa*, *Anthus rufulus*, *Macronyx croceus*, *Nectarinia kiliensis*, *Cinnyris gutturalis*, *Lanius collurio*, *L. caudatus*, *L. humeralis*, *Phylloscopus trochilus*, *Cisticola erythrogenys*, *C. lugubris*, *Centropus superciliosus*, *Coracias garrula*, *Irisor erythrorhynchus*, *Elanus cæruleus*, *Limnocolax niger*, and *Oxyechus tricollaris*.

"The station of Machakos," writes Dr. Hinde, "is situated on the edge of a grass plain which stretches for some miles coastwards. The plain is dotted with thorn-trees about 100 to 300 yards apart, and these small thorns are the only trees in the neighbourhood. The nearest forest is at Kikuyu, about 45 miles away. On the east side of the station is a valley about 500 yards wide through which runs a stream about 2 feet wide and 3 inches deep. The whole valley and patches of the plain are cultivated. On the east side of the stream the mountains rise abruptly, some points being over 2000 feet above the station, which is itself 5300 feet above the sea-level."

Dr. SHARPE exhibited, on behalf of Mr. Ruskin Butterfield, the specimen of the Wall-Creeper (*Tichodroma muraria*)

described by Mr. Butterfield, in the 'Zoologist' for August 1896, as having been shot near Winchelsea.

Mr. W. R. OGILVIE GRANT exhibited a fine series of skins of birds collected by Mr. John Whitehead in the Philippines, among them being examples of the two new species of Thrushes described in the current number of 'The Ibis,' and of the new *Turnix whiteheadi*, described by him in the second volume of his 'Handbook to the Game-Birds.'

Mr. G. H. CATON HAIGH exhibited a specimen of *Phylloscopus viridanus* shot by himself on the 5th of September at North Cotes, Lincolnshire. This Asiatic species was new to Great Britain, but had occurred three times on Heligoland.

Mr. L. BONHOTE exhibited a series of skins of the Common Linnet (*Fringilla cannabina*), showing the gradual change of colour on the breast-feathers of the male. He also described the nesting of the Corn-Crake (*Crex pratensis*) in captivity, and remarked that both captive and wild birds of this species moulted the whole of their quills directly after the young were hatched, and that both male and female were then incapable of flight.

Mr. Bonhote also exhibited a remarkably large skin of a Nightingale, shot in August in Cambridgeshire, which measured 7 inches in length and had a wing of 4.5 inches.

Mr. SCLATER read some extracts from letters received from Mr. J. Graham Kerr (B.O.U.), who had recently left England for Western Paraguay. They contained many notes on the birds observed during his voyage up the La Plata and Paraguay Rivers to Asuncion, where he had arrived on Sept. 13th. As regards the alleged occurrence of a second species of Cormorant on these rivers (Aplin, Ibis, 1891, p. 152), he was inclined to refer all the numerous specimens he had hitherto seen to *Phalacrocorax brasilianus*. On Sept. 12th he observed immense numbers of alligators along the banks, and several flocks of *Chauna cristata*, amongst one of which were some

individuals of *Cathartes atratus*. Near the mouth of the Paraguay was passed an enormous flock of the Maguari Stork (*Euxenura maguari*), with 4 or 5 Jabirus (*Mycteria americana*) amongst them. Other birds noted on the Paraguay were *Ceryle amazona*, *C. torquata*, *C. americana*, *Pyrocephalus rubineus*, *Furnarius rufus*, *Aramides ypecaha*, *Ardea cocoi*, *A. egretta*, *Cairina moschata*, and *Dendrocycna fulva*. Mr. Kerr was expecting to leave Asuncion for Concepcion, on the Upper Paraguay, on the 23rd September.

Mr. SCLATER exhibited a pair of the Great Nuthatch (*Sitta magna*) from the Shan States, Burmah, collected by Major Rippon. The species was only previously known from a female example described by Major R. G. Wardlaw Ramsay in 1876.

Mr. W. B. TEGETMEIER exhibited some snail-shells (*Helix nemoralis*), forty-eight of which had been taken from the crop of a Pheasant.

Mr. OSWIN A. J. LEE exhibited a series of photographs of nests and eggs of British birds, as well as coloured photographs of eggs of some Raptores and Alcidæ. These pictures were very much admired by the members present, and a cordial vote of thanks was passed to Mr. Lee for their exhibition.

No. XXXIX. (December 5th, 1896.)

THE thirty-eighth Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 18th of November, 1896.

Chairman : P. L. SCLATER, F.R.S.

Members present :—O. V. APLIN, E. BIDWELL, F. C. CRAWFORD, P. CROWLEY, W. E. DE WINTON, Dr. F. D. DREWITT, Col. PAGET W. L'ESTRANGE, R.A., A. H. MACPHERSON, Rev. H. A. MACPHERSON, J. G. MILLAIS, R. NESHAM, C. E. PEARSON, H. J. PEARSON, FRANK PENROSE, E. LORT PHILLIPS, H. LEYBORNE POPHAM,

R. H. READ, HOWARD SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), E. CAVENDISH TAYLOR, N. F. TICEHURST, A. B. R. TREVOR-BATTYE, H. M. WALLIS, WATKIN WATKINS, JOHNSON WILKINSON, LIONEL A. WILLIAMS, JOHN YOUNG.

Visitors: J. HOWARD DAVIES, Dr. C. I. FORSYTH MAJOR, H. STEVENS, S. YARDLEY, C.M.G., J. J. BALDWIN YOUNG.

Mr. ROBERT READ exhibited and made remarks on some interesting nests of birds from Sweden, a nest of the Honey-Buzzard being among the specimens exhibited.

Dr. BOWDLER SHARPE stated that Professor Smit, the Director of the Stockholm Museum, had kindly forwarded to England, for his inspection, the type specimen of *Plangus naegæus* of Sundevall (*Öfv. K. Vet.-Akad. Forh. Stockholm*, 1874, p. 28). Since the species had been described and made the type of a distinct genus, no one had attempted to determine its identity, and it was interesting to find that *Plangus naegæus* was in reality the young of *Harpyhaliaëtus coronatus*.

Dr. Sharpe also exhibited a specimen of the Pied Wagtail (*Motacilla lugubris*), shot near Wandsworth on the 18th of October by Mr. Henry Grant. The changes through which the bird was passing were clearly, according to Dr. Sharpe, those of pattern in the feather rather than those of moult.

Mr. SCLATER exhibited a chick of the Black-winged Peafowl (*Pavo nigripennis*) which had been bred in Mr. Blaauw's garden in Holland, and remarked that he still strongly maintained the validity of this species, which in the 22nd volume of the 'Catalogue of Birds' had been classed only as a "well-marked variety," and was confident that its native habitat would be ultimately discovered. Not only was the male of this species different from that of *P. cristatus*, but the female was quite different, and so was the young, as shown by the specimen now exhibited.

Mr. Sclater read the following notes from Mr. Blaauw on this subject :—

"In answer to your questions about the breeding of *Pavo nigripennis*, I can state that I have bred these birds for the last six years, having had between 10 and 20 young birds every year. These birds have *never* shown any signs of variation.

"The chicks when they leave the egg are always of a silky yellowish-white colour all over. The flight-feathers, when they begin to appear, are always yellowish white at the end and brownish at the base, especially so on the inner web. The tail-feathers also are dark at the base, with whitish tips. The birds then gradually get the well-known light plumage of the *Pavo nigripennis* hen. If the young bird is a male, the plumage soon becomes mottled with dark feathers, and in autumn many greenish and bluish feathers are visible. In the second autumn the male comes into full colour, except the long train, which comes a year later.

"As I four times lost my old breeding-cock, I had to replace it as many times and got birds from different places, and the offspring from these cocks never showed any variation either as chicks or as adult birds. If *Pavo nigripennis* is not a species it certainly is a wonderfully constant variety.

"I may add that the bill and legs of chicks are of a pale flesh-colour."

Mr. SCLATER called attention to the "Act to amend the Wild Birds' Protection Act, 1896," passed during the last Session of Parliament, whereby the Secretary of State was enabled, on application, for special reasons, to make an order prohibiting the taking or killing of particular kinds of wild birds during the whole year. Mr. Sclater suggested that advantage should be taken of this power to render penal throughout the year the destruction of such birds as the Hoopoe and the Golden Oriole, which might be reasonably expected to breed in some of the southern counties of England if they were not molested.

Mr. SCLATER gave a short account of his 48-hours' visit to Spitsbergen in the Orient s.s. 'Garonne' in August last,

and mentioned, as some of the more interesting birds he had noticed there, the Snow-Bunting, the Purple Sandpiper, the Ivory Gull, and Buffon's Skua. An example of the Spitsbergen Ptarmigan (*Lagopus hemileucurus*) had been shot by one of the party while they were in Icc Fiord, but the bird was stated to be rare there.

The Rev. H. A. MACPHERSON exhibited two interesting hybrids of *Lagopus scoticus* and *Tetrao tetrix*.

Colonel L'ESTRANGE drew attention to some of the points relating to the law as it affected bird-catching.

X.—Notices of recent Ornithological Publications.

1. *Annals of Scottish Natural History*, Nos. 19 & 20, July and October, 1896.

In No. 19 Mr. Lionel W. Hinxman reports on "the Migration and Occurrences of Birds in Scotland during 1895," and expresses his regret at the falling off in the number of schedules sent in for that year—only 20 having been received as compared with 36 for 1894. From Barra three species not hitherto identified in the Outer Hebrides are now recorded. Mr. William Evans, as well as Mr. T. E. Buckley, add to our previous knowledge of the breeding-range of the Tufted Duck (*Fuligula cristata*) in Scotland, and both these authorities likewise show that the Pochard (*F. ferina*) has nested in Fife, and even in Hoy, Orkney; while the Rev. H. A. Macpherson discourses of *Harelda glacialis* in the Solway Firth. In No. 20 Mr. R. Godfrey has an interesting paper on the birds observed last summer in Shetland, wherein he shows that the Great Skua is extending its breeding-area, and the same may be said of the Fulmar. Mr. W. Evans has identified the Roseate Tern and an *adult* example of Sabine's Gull in the Firth of Forth; a Roller was obtained in Orkney in June; and Mr. T. E. Buckley reports a Greenland Falcon from Skye on the 26th of May.

2. 'The Auk,' July and October, 1896.

The July number opens with a paper by Mr. H. K. Job on the Ducks of Plymouth co., Massachusetts; Mr. Walter Faxon gives details of the more interesting of the 200 drawings of the birds of Georgia made by John Abbot between 1790 and 1810; Mr. O. Widmann remarks upon the Peninsula of Missouri as a winter home for birds; Mr. A. W. Anthony indicates the points wherein his experience differs from that of Mr. Leverett M. Loomis respecting *Puffinus opisthomelas*; Mr. A. H. Norton records his observations on the Harlequin Duck in Maine; Mr. Ruthven Deane contributes some notes on the Passenger Pigeon in confinement; and Mr. D. W. Prentiss gives an account of some birds met with in Bermuda. The coloured frontispiece represents *Lagopus evermanni*, sp. n., from Alaska, described by Prof. D. G. Elliot in the January number, and named after Prof. B. W. Evermann (*cf.* Ibis, 1896, p. 410).

In the October 'Auk' the coloured plate is intended to show the differences between two of the geographical races of *Anmodramus caudacutus*, and illustrates a paper by Mr. Jonathan Dwight, Jr. Mr. R. F. Young and Mr. W. T. Bailey severally write on Pennsylvanian birds; Mr. Sylvester D. Judd discourses on the feeding-habits of the English Sparrow and the American Crow, accentuating the iniquities of the former species; Mr. H. C. Oberholser critically examines the Mexican forms of the genus *Certhia*; Mr. Abbott H. Thayer makes "Further Remarks on the Law which underlies Protective Coloration"; and Dr. A. P. Chadbourne contributes a first instalment on "Evidence suggestive of the Occurrence of 'Individual Dichromatism' in *Megascops asio*." There are also two papers which will interest ornithologists on this side, namely, "Summer Birds of the Rhine," by Mr. Ralph Hoffmann, and "The Cormorant-rookeries of the Lofoten Islands," by Dr. R. W. Shufeldt, with a plate after a photograph taken by Prof. Collett. It is pleasant to find our American cousins taking notice of Palearctic birds.

3. *Berg's Oological Notices.*

[Comunicaciones Oologicas por el Dr. Carlos Berg, Director del Museo Nacional de Buenos Aires. An. Mus. Nac. Buenos Aires, v. p. 33.]

Dr. Berg casts scorn upon the supposed new diminutive *Rhea* (*R. nana*) which Mr. Lydekker has lately established on an egg in the La Plata Museum obtained in Patagonia (*cf.* Rev. Mus. La Plata, vi. p. 103 (1895); *Ibis*, 1895, p. 171), and is of opinion that the egg in question is only a "cock's-egg" of *R. darwini*. He has seen similar eggs of *R. americana*. Dr. Berg also describes the egg of *Crax sclateri* (which, misled by the author of the 22nd volume of the B. M. Catalogue, he calls *C. fasciolata*) and an abnormal clutch of eggs of *Vanellus cayennensis*.

4. *Bladen on the Cuckoo and its Foster-Parents.*

[The Cuckoo and its Foster-Parents.—Being a Portion of the Annual Address delivered to the Members of the North Staffordshire Naturalists' Field Club and Archæological Society. By W. Wells Bladen, President. Reprinted from the Trans. North Stafford. Nat. Field Club, March 1896.]

Mr. Bladen's address contains an account of the principal facts hitherto ascertained as to the breeding-habits of the Common Cuckoo (*Cuculus canorus*), and concludes with a complete list of the 145 species of birds in the nests of which it has been known to deposit its eggs.

5. *Büttikofer on a probably new Tinamou.*

[On a probably new Species of *Crypturus*. By Dr. J. Büttikofer. Notes Leyd. Mus. xviii.]

This supposed new species is based on a specimen lately living in the Zoological Garden of Amsterdam, and stated to have been received from Argentina. It is very closely allied to *C. tataupa* and *C. parvirostris*.

6. *Büttikofer on the Genus Pycnonotus and its Allies.*

[On the Genus *Pycnonotus* and some allied Genera, with Enumeration of the Specimens in the Leyden Museum. By J. Büttikofer. Notes Leyd. Mus. xvii. note 32.]

Dr. Büttikofer gives us a revision of the species of *Pycnonotus* and of 20 of the allied genera based upon the specimens

in the Leyden Museum, and embracing altogether some 60 species. Of these genera, five are now newly proposed, namely :—*Centrolophus* (type *Brachypus leucogenys*, Gray), *Pachycephalixus* (type *Pycnonotus sinensis*), *Stictognathus* (type *Pycnonotus taiwanus*, Styan), *Gymnocrotaphus* (type *Brachypus tygus*, probably a misprint for *typus*, Bp.), and *Mesolophus* (type *Otocompsa flaviventris*).

7. Cherrie on Birds from San Domingo.

[Contribution to the Ornithology of San Domingo. By George K. Cherrie. Field Columbian Museum Publication 10. Ornithological Series. Vol. i. no. 1, 1896.]

After a preliminary account of his routes and adventures in San Domingo, where he landed at Santo Domingo city on January 8th, 1895, Mr. Cherrie, who was sent on a collecting excursion by the authorities of the Field Columbian Museum of Chicago, gives us a list of the birds of which he obtained specimens, and adds valuable field-notes on each species. Mr. Cory and his collectors having made almost a clean sweep of the island so far as birds are concerned, only two new species (*Elainea cherriei* and *Ilyetornis fieldi*, previously characterized by Mr. Cory) were discovered; but Mr. Cherrie obtained good series of specimens of such little-known birds as *Microligea palustris*, *Euphonia musica*, *Phænicophilus palmarum* (the most abundant bird in San Domingo!), *Loxomitris dominicensis*, and *Nesocittes micromegas*, besides a single example of *Pitangus gabbi* and three of *Calyptophilus frugivorus*.

We regret to observe that Mr. F. J. V. Skiff, in a notice of the publications of this new Museum, attached to this paper, uses the horrible word "*scientist*" instead of "*scient*," which is an exact equivalent and a correctly formed term.

8. Crossman on the Birds of Hertfordshire.

[Notes on Birds observed in Hertfordshire during the year 1895. By Alan F. Crossman, F.L.S. Trans. Hertf. N. H. Soc. ix. p. 73.]

Mr. Crossman's report on the birds of Hertfordshire for 1895 adds three species to the county list. These are the

White Wagtail (*Motacilla alba*), the Two-barred Crossbill (*Loxia bifasciata*), and Baillon's Crake (*Porzana bailloni*). Two of these did not actually occur in 1895, but have not been previously recorded. Mr. Crossman also points out that the Great Bustard (not hitherto generally included in the Hertfordshire list) is said to have been formerly found on Royston Heath. It is stated that there are 40 or 50 pairs of the Great Crested Grebe (*Podiceps cristatus*) on the Tring reservoirs in summer.

9. *Finn on two rare Indian Ducks.*

[On the Occurrence in India of two rare Ducks—*Fuligula baeri* and *Erismatura leucocephala*. By F. Finn. Proc. A. S. B., April 1896.]

Eleven specimens of Baer's Duck were procured by Mr. Finn in the Calcutta Bazaar in February last*. The occurrence of this N.E. Asiatic species in India had not been previously established. It is a near ally of *Fuligula nyroca*. The example of *Erismatura leucocephala* was shot in Central India near Lucknow. The British Museum contains several examples from the same district and others from the North-west Provinces.

10. *Hartert on a new Swift from Madagascar.*

[A new Form of Swift from Madagascar. By Ernst Hartert. Novitates Zool. iii. p. 231 (1896).]

Micropus willsi, as Mr. Hartert proposes to call this species, is apparently a small form of "*M. melba africanus*," based upon a single specimen obtained by the Rev. J. Wills near East Imerina, in Eastern Madagascar, in February 1896, and sent to the Tring Museum.

11. *Hartert on Everett's Collections in Celebes and the adjacent Islets.*

[On Ornithological Collections made by Mr. Alfred Everett in Celebes and on the Islands south of it. By Ernst Hartert. Novitates Zool. iii. p. 148 (1896).]

Mr. Alfred Everett arrived at Macassar in September

* Three of these were sent alive by Mr. Finn to the Zoological Society. See P. Z. S. 1896, p. 780.

1895, and determined to explore Bonthain Peak, an enormous mountain of nearly 10,000 feet elevation in the southern peninsula of Celebes. During his stay there he met the two Messrs. Sarasin similarly employed, and their specimens, having reached Europe first, have been already described by Messrs. Meyer and Wieglesworth (see *Ibis*, 1895, p. 397). Nevertheless Mr. Everett was still able to add new species to the list. Mr. Hartert refers Mr. Everett's specimens to 103 species, of which the following are described as new:—*Cinnyris frenata dissentiens*, *Oriolus celebensis meridionalis* (ex MS. Meyer et Wieglesw.), *Siphia bonthaina*, and *Spilospizias trinotatus hesitandus*. Specimens were also procured of the rare Crow *Gazzola typica*, and two males of *Surniculus muschenbroeki*—a Cuckoo of which only one female (procured in Batchian by Dr. A. B. Meyer's hunters) was previously known (*cf.* Cat. Birds, xix. p. 230).

On leaving Celebes Mr. Everett sent his men to Saleyer, and afterwards went there himself, and also to the adjoining islands of Kalao and Djampea, between Flores and Celebes. Saleyer had been previously visited by Prof. Max. Weber in 1888–89, and examples of 14 species were obtained there (see *Ibis*, 1894, p. 435). But Mr. Everett has now increased the list to 40 species, and has collected specimens of 41 species in Djampea and 24 in Kalao.

Mr. Everett's series from these three islands represent altogether 73 species, of which *Pachycephalus everetti*, *Edolisoma emancipata* (lege *emancipatum*!), *Siphia djampeana*, *Monarcha everetti*, *Pitta virginalis*, and *Osmotreron wallacci pallidior* are now described as new from Djampea, and *Siphia kalaoensis* from Kalao. "From the present material it would appear that both Djampea and Kalao have as much, or rather more, in common with the Lesser Sunda Islands and Timor as with Celebes. But a few forms are peculiar.

"The ornis of Saleyer is evidently that of South Celebes in general."

12. *Le Souëf's Trip to Mallacoota.*

[A Trip to Mallacoota. By D. Le Souëf. Vict. Nat. xiii. p. 18 (1896).]

A very interesting account of his trip on a bicycle from Melbourne to Mallacoota was read by Mr. Dudley Le Souëf before the Field Naturalists's Club of Victoria in January last, and is now printed in the 'Victorian Naturalist.' Field-notes on birds occupy most of the discourse of this enthusiastic observer. On the Gippsland lakes Ducks, Swans, and Gallinules were seen in many thousands, and "they could only be described by acres of them." At Mallacoota Lyre-birds were numerous in the gullies, and a long list of other species found breeding is given.

13. *Loomis on Californian Water-birds.*

[California Water-birds. No. III. South Farallon Island in July. By Leverett M. Loomis. Extr. fr. Proc. Cal. Acad. Sci. ser. 2, vol. vi.]

In the third of his series of papers on the water-birds of the Californian coast, Mr. Loomis gives an account of the feathered inhabitants of the Farallones Islands off San Francisco, which he visited in July last. Here the sea-birds' eggs are collected for sale in San Francisco to the amount (in 1896) of 7645 dozens—chiefly those of *Uria troile californica*. Mr. Loomis gives a list, accompanied by good field-notes, of the ten indigenous birds and four stragglers noted. Besides the Murres, the Tufted Puffin (*Lunda cirrhata*), Cassin's Auklet (*Ptychorhamphus aleuticus*), and the Pigeon-Guillemot (*Cephus columba*) are abundant, and two Petrels were found nesting—*Oceanodroma leucorhoa* and *O. homochroa*.

14. *Lucas and Ridgway on the Procnatiidæ.*

[Osteological and Pterylographical Characters of the Procnatiidæ. By F. A. Lucas. Proc. U. S. N. Mus. xviii. p. 505.—Characters of a new American Family of Passerine Birds. By Robert Ridgway. Proc. U. S. N. Mus. xviii. p. 449.]

Mr. F. A. Lucas first pointed out the notable characters of the skull of *Procnias*, which has hitherto been usually

regarded by modern writers as an aberrant member of the Tanagridæ, in a communication made to 'The Auk' in April 1895 (p. 186). Mr. Ridgway thereupon proposes to elevate this type to the rank of an independent family of Oscines, and now gives us his diagnosis of it. Mr. Lucas adds a paper in which the osteological and pterylographical characters of the Procnatiidæ are set forth. The striking features of the skull of *Procnias* consist in "the total absence of the transpalatine processes, the small size of the interpalatines, and the outward curvature of the prepalatine bars." It is not, however, suggested that the systematic position of this form should be materially altered, as it still seems to be quite as nearly allied to the Tanagridæ as to any other family of Passeres.

15. *Mivart's 'Monograph of the Lories.'*

[A Monograph of the Lories, or Brush-tongued Parrots, composing the Family Loriidæ. By St. George Mivart, F.R.S. Pp. i-iii, 1-193. Folio. London: R. H. Porter, 1896.]

The issue of Dr. Mivart's beautifully illustrated Monograph of the Lories must be considered as one of the leading ornithological events of the past year, and would have been noticed in our last number had not time failed us for its detailed examination. Now that we have been able to study it carefully, we have come to the conclusion that the present volume forms no unworthy addition to the splendid series of pictured memoirs upon select groups of birds which the brethren of the British Ornithologists' Union have published during the past twenty years. In some points Dr. Mivart's monograph is almost unique among its fellows, every one of the known species being figured on 61 plates drawn by Keulemans, and 22 of the figures being taken from the typical specimens, whilst 16 of the species are now represented for the first time.

In his arrangement of the Lories and in the general treatment of the genera and species, Dr. Mivart has wisely determined to follow Count Salvadori's well-known work which constitutes the twentieth volume of the British

Museum Catalogue. Here, as he remarks in his preface, that accomplished ornithologist "has furnished ready to hand a careful classification, excellent though short descriptions, exact statements as to geographical distribution, and an exhaustive bibliography." Thus Dr. Mivart's chief work has been the testing of Count Salvadori's statements, and the addition to them of such further information as his many friends and correspondents in this country and on the Continent have been able to supply to him. The anatomical chapter given in the introduction is, however, quite original, as is the exhaustive account of the geographical distribution of the Lories, which is excellently illustrated by special maps, and presents many features of great interest.

It might be supposed that the completion of the present work would leave little more to be done on the subject of the Lories. But such is the inexhaustible fertility of Nature that those who turn over Dr. Mivart's pages will observe that numerous points are specified as open for further study. Of some well-marked species the exact habitats are still unknown, others are founded on unique specimens and require confirmation by additional evidence. In some cases, again, what are apparently species may turn out hereafter to be mere varieties. Even in such a favourite and much-studied group as the Lories, therefore, there is a large field left open for future investigators.

16. *Nathusius on the Oology of the Rheas.*

[Zur Oologie der Rhea-Arten. Von W. v. Nathusius, J. f. O. 1896, p. 257.]

Herr W. v. Nathusius has added another contribution to his valuable series of essays on the structure of the egg-shell in birds by the present article on the Oology of the Rheas. It is, however, unfortunate that he had not at his disposal a better authenticated set of specimens to base his studies upon, most of them having been obtained through dealers without any positive evidence of their origins and localities. The *Rhea americana* is now so common in Zoological Gardens that it could not be difficult to obtain authentic specimens

of its eggs. Of *R. macrorhyncha*, Herr v. Nathusius does not seem to have examined any examples.

The conclusion arrived at by the author, after full discussion of the various specimens, is that eggs of *R. darwini* are at once distinguishable from those of *R. americana* (Argentine examples being taken as typical of this form) by the considerably larger diameter of the mamillæ.

Herr v. Nathusius is of opinion that, judging from the difference in the diameter of the mamillæ, the Rhea of Paraguay may be specifically distinct from that of Buenos Ayres.

As regards the occurrence of *Rhea darwini* in Northern Chili, Herr v. Nathusius has omitted to notice that this extension of its range has been already ascertained and more than once commented upon by Selater*.

17. Oberholser on two new American Woodpeckers.

[Descriptions of two new Subspecies of the Downy Woodpecker, *Dryobates pubescens*. By Harry C. Oberholser. Proc. U.S. Nat. Mus. xviii. p. 547.]

Mr. Oberholser proposes to separate from the Downy Woodpecker of North America two geographical subspecies—*Dryobates pubescens meridionalis* (Sw.), from the Gulf States, and *D. p. nelsoni*, from Alaska and Northern China.

18. Reed's Catalogue of Chilean Birds.

[Catálogo de las Aves Chilenas, por Edwyn C. Reed. Santiago, 1896. (Publicado en los 'Anales de la Universidad,' tomo xciii.)]

We are glad to see that Mr. Reed has returned to the study of his country's birds. His list is far superior to anything else that has appeared in Chili on this subject. Mr. Reed has judiciously followed as nearly as may be James's 'New List of Chilean Birds' of 1892, which was carefully corrected and revised by Selater before publication. He has added much to the value of his list by the short notes on distribution and occurrence attached to each species.

* See P. Z. S. 1890, p. 412, and 1891, p. 137.

Mr. Reed increases the list of the birds of Chili to 278, that is 23 more than James, as he enlarges the area of Chili down to the Magellan Straits, to which it nominally extends.

There are a good many unnecessary misprints in the scientific names of the list, and we can assure Mr. Reed that *Henicornis phænicura* of Patagonia is quite a distinct species from *H. melanura* of Chili (*cf.* Cat. B. xvi. p. 26), as he would at once allow if he had ever seen specimens of it.

19. *Reichenow on Papuan and Australian Birds.*

[Zoologische Forschungsreisen in Australien und dem Malayischen Archipel. Mit Unterstützung des Herrn Dr. Paul von Ritter ausgeführt in den Jahren 1891–93 von Dr. Richard Semon. Liste der Vögel. Bestimmt von Dr. A. Reichenow. Folio. Jena, 1894.]

The first number of the fifth volume of Dr. Semon's great work on the results of his journey in Australia and the Malay Archipelago contains a list, compiled by Dr. Reichenow, of about 50 species of birds of which Dr. Semon obtained specimens. There appears to be nothing specially remarkable amongst them.

20. *Richmond on Birds from Kashmir, Baltistan, and Ladak.*

[Catalogue of a Collection of Birds made in Kashmir, Baltistan, and Ladak, with Notes on some of the Species and a Description of a new Species of *Cyanecula*. By Charles W. Richmond. Proc. U.S. Nat. Mus. xviii. p. 451.]

Dr. W. L. Abbott, of Philadelphia, well known to naturalists for his explorations in East Africa, the Seychelles, and the adjoining islands, spent part of the years from 1891 to 1894 in travel in Cashmir and the neighbouring districts of Northern India. Hence he sent home to the U.S. National Museum 746 well-prepared specimens of birds, which are now catalogued by Mr. Richmond and referred to 188 species. Mr. Richmond has for convenience used the sequence of families and genera employed by Dr. Sharpe in his account of the birds of the second Yarkand Mission, but has varied the nomenclature in places by introducing some

of the results of Dr. Stejneger's "inconvenient discoveries," in which we trust that no one will follow him.

The birds of all this district have been collected in mass by Mr. Hume and his assistants, and by many other Indian ornithologists. Mr. Richmond nevertheless ventures to describe a new Blue-throat, *Cyanecula abbotti*, from the Nubra Valley, Ladak, where *C. succica* was also obtained. It is admitted to be "very closely related to the White-spotted Blue-throat, *Cyanecula wolffi*," but is stated to differ "in the deeper blue of the throat, the blue lores, and the longer bill." It is, probably, the *Cyanecula wolffi* of Hume, Biddulph, and others, from the same countries.

21. *Ridgway on Birds from the Seychelles and adjoining Islands.*

[On Birds collected by Dr. W. L. Abbott in the Seychelles, Amirantes, Gloriosa, Assumption, Aldabra, and adjacent Islands, with Notes on Habits, &c., by the Collector. By Robert Ridgway. Proc. U.S. Nat. Mus. xviii. p. 509.]

We have now a complete report upon the specimens of birds collected by Dr. W. L. Abbott, of Philadelphia, on the Seychelles and other islands of the Indian Ocean and transmitted to the National Museum at Washington. Mr. Ridgway has already published characters of the principal novelties (see *Ibis*, 1894, p. 314; 1895, p. 292).

The specimens were 264 in number, and represent, as Dr. Abbott believes, almost all the species found in the islands visited. "No land-birds exist, unless introduced, on any of the Amirantes or other islands between the Seychelles and Cosmoledo and Aldabra." In Aldabra 14 land-birds were found resident, and 6 others (accidental visitors) were obtained.

In the list of Seychelles birds, 27 species are included. Amongst these was one example of *Palaornis wardi* from Mahé, where it is "on the verge of extinction," but it is said to be still common on Silhouette. A provisional name (*Turtur abbotti*) is given to the local form of *T. picturatus*. On the Amirante group examples of 24 species were met

with. Amongst these was *Turtur saturatus*, restricted to this locality. Twelve species were found on Assumption Island, amongst which was a new Rail (*Dryolimnas abbotti*), a new Booby (*Sula abbotti*), and a new Sun-bird (*Nectarinia abbotti*). On Gloriosa Island examples of 22 species were obtained or observed, of which 4 were Passeres, and *Ixocincla madagascariensis rostrata* is a doubtfully new subspecies. Of Aldabran birds no fewer than 45 are enumerated, of which 10 are Passeres. The European Sand-Martin (*Cotyle riparia*) was found on Gloriosa and Aldabra. A very useful table of distribution of the 212 species recognized as occurring in the various islands is given at the end of the article. It is a pity that a map, showing the exact positions of the island-groups and their distances from each other, is not appended.

22. *Salvadori on a new Rhamphocœlus.*

[Descrizione di una nuova specie del genere *Rhamphocœlus* di Chiriqui. Boll. Mus. Zool. Torino, xi. no. 249 (July 1896).]

Rhamphocœlus festæ is a new species allied to *R. passerinii*, but distinguishable by its smaller size and red breast-band. The type-specimen was obtained by Dr. Festa during a recent traverse of the isthmus of Darien, and was presented by him, along with other specimens, to the Zoological Museum of Turin.

23. *Semon's 'Im Australischen Busch.'*

[Im Australischen Busch und an der Küsten des Korallenmeeres. Reiserlebnisse und Beobachtungen eines Naturforschers in Australien, Neu-Guinea und den Molukken, von Richard Semon, Professor in Jena. Leipzig: Engelmann, 1896.]

This is one of the best books of travel and natural history that we have read for a long time, and may be compared favourably even with those of such past-masters in this department as Wallace and Bates. Prof. Semon went out to Australia to study the development of Monotremes, Marsupials, and *Ceratodus*, in which he appears to have attained undoubted success. On his journey home he visited the

south end of New Guinea, the Moluccas, Celebes, and Java, and seems to have kept his well-trained powers of observation hard at work at these places also. Prof. Semon apparently paid special attention to the Mammal-class, but goes into nearly every branch of zoology, botany, geology, and anthropology, not to mention politics. There are numerous references to birds throughout the volume. We may especially call the attention of our readers to the narrative of Prof. Semon's excursion up the Gara River from Milne Bay, where he met with Lories, Paradise-birds, Black Cockatoos, Goura-Pigeons, and other rarities of the rich avifauna of New Guinea.

24. *Sharpe on the Limicolæ.*

[Catalogue of the Birds in the British Museum. Volume XXIV. Catalogue of the Limicolæ in the Collection of the British Museum. By R. Bowdler Sharpe. London, 1896.]

The twenty-fourth volume of the great Catalogue of Birds is devoted to the Limicolæ. It contains an account of 255 species of this group, which are represented in the National Collection by no less than 13,440 specimens, "exclusive of many hundreds of duplicates." Only five of the recorded species have no representatives in the British Museum.

Dr. Sharpe divides the Limicolæ into six families—Ædicnemidæ, Cursoriidæ, Parridæ, Charadriidæ, Chionididæ, and Thinocorythidæ.

The Ædicnemidæ are divided into 4 genera, which contain altogether 11 species.

The Cursoriidæ are arranged in 8 genera, containing 25 species. Besides the Coursers, the aberrant forms of *Dromas* and *Ortyxælus* are placed in this family. We agree, however, with Dr. Sharpe's remark that *Dromas* should probably stand alone.

The third family, "Parridæ," contains, as here arranged, 7 genera and 11 species. We may remark that, as Dr. Sharpe (following Dr. Stejneger) discards the Linnean term *Parra* for the Jacanas altogether, he is not at liberty to use it for the name of the family.

In the fourth family, Charadriidæ, will be found assembled the great mass of the Limicolæ, as it embraces all the forms usually referred to the Scolopacidæ as well as the Plovers. It is divided into ten subfamilies, and contains altogether 79 genera and 190 species. The characters employed in the diagnoses of these subfamilies are mostly taken from the toes and the scaling of the tarsi. A new genus (*Peltohyas*) and a new subfamily (*Peltohyatinæ*) are formed for Gould's *Eudromias australis*, apparently because of the different scaling of the tarsus.

The Sheath-bills, Chionididæ, constitute Dr. Sharpe's fifth family of Limicolæ. He recognizes 2 genera and 3 species of these abnormal Sea-Plovers.

Finally, the Thinocorythidæ, with 2 genera and 5 species, close the list of Limicolæ. If the name of the family be thus orthographically emended, the generic name *Thinocorus* should be written "*Thinocorys*" (*θις*, *littus*, and *κόρυς*, *alauda*).

The following new generic terms are proposed in the present volume :—

Hydrophasis (p. 69), emended from *Hydrophasianus*.

Phyllopezus (p. 76), type *Parra africana*.

Asarcia (p. 86), type *P. variabilis*, Linn. (i. e. *P. gymnostoma*, Wagl.).

Microsarcops (p. 133), type *Pluvianus cinerea*, Blyth.

Zonifer (p. 154), type *Charadrius tricolor*, Vieill.

Anomalophrys (p. 156), type *Lobivanellus superciliosus*, Reichenb.

Eurypterus (p. 171), altered to *Euhyas*, p. 736, type *Charadrius leucurus*, Licht.

Peltohyas (p. 307), type *Eudromias australis*, Gould.

Mesoscolopax (p. 371), type *Numenius minutus*, Gould.

So far as we can see, only one new species is characterized for the first time. This is *Hæmatopus durnfordi* (p. 118) from Patagonia.

Excellent coloured figures, drawn by Keulemans, of the following species are given :—*Rhinoptilus bisignatus*, R.

hartingi, *R. cinctus*, *R. seebohmi*, *R. chalcopterus*, *R. albo-fasciatus*; *Galactochrysea liberia*, *G. emini*; *Hæmatopus durnfordi*; *Deflippia crassirostris* and *D. leucoptera*.

Ornithologists should be, and are, most thankful to Dr. Sharpe for the care he has bestowed upon this volume, in which the compilation of the multitude of synonyms and the registry of the numerous specimens in proper order must have cost him many weeks of dreary labour. We are sure, however, that he will allow us to state our candid opinion that the generic divisions employed are far too many, and that the numerous changes introduced into nomenclature might have been in many cases avoided.

As regards the first point: genera, as we all know, do not exist in nature, and it is a mere matter of convenience how large or how small we make them. Dr. Sharpe divides his 255 species of *Limicolæ* into 102 genera, *i. e.* about $2\frac{1}{2}$ species to each genus. It is a great burden to the memory to carry in one's mind so many extra names, and in our opinion it would have been a much better plan to employ about half these generic terms as subgenera, affixing them at the head of the various sections into which the genus is divided. We might thus say in ordinary parlance *Glareola isabella* and *Glareola ocularis*, stating, when there is a necessity for so doing, that the former belongs to the subgenus *Stiltia*, and the latter to the subgenus *Galactochrysea*.

As regards the changes in nomenclature proposed by Dr. Sharpe, we find on going through the 48 species of *Limicolæ* in the B. O. U. List we should have to alter the names of just half of them to conform to the British Museum Catalogue. We do not believe that such a course would meet with general acquiescence, and we do not think of adopting it under any circumstances. In many cases the older names taken up of late years on the alleged ground of priority are so uncertain that it is a mere matter of opinion whether they are applicable to one species or another. No change should be made in such cases as these.

25. *Southwell's Guide to the Norwich Castle Museum.*

[The Official Guide to the Norwich Castle Museum. With an Account of its Origin and Progress. By Thomas Southwell, F.Z.S. Also an Historical Account of the Castle-Keep, by Rev. Wm. Hudson, M.A., and a Guide to the Collection of Pictures: with some account of the "Norwich School" of Artists, by G. C. Eaton. 8vo. London: Jarrold and Sons, 1896.]

The Norwich Castle Museum contains, as we all know, the unrivalled Gurney Collection of Raptorial Birds, and must therefore ever be of surpassing interest to all ornithologists. Mr. Southwell's 'Guide' gives us an excellent general account of them, as they are now rearranged in Norwich Castle in 55 cases. The Museum also contains a good series of local birds, to which has been united the "Lombe" Collection formed by the late Edward Lombe of Melton, near Norwich. The gem of this collection is an example of the Great Auk. Besides this, there are specimens of Savi's Warbler, the Red-footed Falcon, the Caspian Plover, and many other rarities obtained within the county of Norfolk.

26. *Stirling and Zietz on Genyornis newtoni.*

[Preliminary Notes on *Genyornis newtoni*, a new Genus and Species of Fossil Struthious Bird, found at Lake Callabonna, South Australia. By E. C. Stirling, M.D., F.R.S., and A. H. C. Zietz, F.L.S. Trans. R. Soc. of S. Australia, vol. xx. p. 171 (1896).]

A recently issued part of the 'Transactions of the Royal Society of South Australia' (vol. xx. pt. i.) gives us a preliminary account of the new fossil Struthious bird of Lake Callabonna, *Genyornis newtoni*, of the discovery of which we have already spoken more than once*. It will be difficult to understand the exact position of this remarkable addition to the Class of Birds until a more detailed description of its remains, and figures of them, have been published. In the meanwhile we reprint the conclusions concerning it which the authors of the present memoir have arrived at after their preliminary studies:—

"Though, in the absence of a careful study of so important

* See Ibis, 1894, pp. 328, 577, and 1896, pp. 430, 593.

a part of the organization as the head, it is perhaps premature to offer decisive opinions as to the habits of the bird or of its affinities with existing members of its group, nevertheless the following conclusions appear to be justified by the survey of its remains so far as this has been made.

“The great size of the femur and tibio-tarsus, no less than of its sternum, indicate its massive build, though there is a strange disproportion between the proportions of the upper leg-bones and the relatively slender tarso-metatarsus. Its legs combine a huge femur nearly as massive, in all but length, as that of *Dinornis maximus*, and a tibia equalling that of *Pachyornis elephantopus* with the comparatively slender metatarsus of *Dinornis novæ-hollandiæ* (*ingens*) and toes which are insignificant beside any of the larger Moas. The absence of prominent rough surfaces or ridges for muscular attachment leads one to assign to it a slow, sluggish habit. In height it may be confidently stated to have been from 6 feet to 6 feet 6 inches, that is, if the neck should have been of proportions similar to those of *Pachyornis elephantopus*. With the large size of the head, however, may be correlated modifications of the neck. The small flat ungual phalanges would appear to have borne flattened nails, rather than sharp and powerful claws, which could have been of little service for scratching purposes, and with this feature is associated an evident want of strength in the phalangeal joints.

“There is reason to believe that the *Diprotodon* may have been a swamp-loving animal which, tapir-like, may have haunted the shores of the lacustrine areas of Central Australia in Pliocene times, and the association of the remains of *Genyornis* with those of *Diprotodon* suggests that the bird, too, may have had its haunts, and found its food, by the same swamps as its bulky marsupial associates. The thickness of the lower jaw is scarcely commensurate with its great length and depth, and this fact, with the weakness of the toes, suggest that, like the Emeu, herbage, rather than roots, may have formed its food.

“In the course of our brief description and comparisons

it will have been seen that the resemblances to the Emeu, and to a less extent to the Cassowary, are many and considerable.

"The presence of the bony bridge is, however, a conspicuous, if not morphologically important point of difference. The Emeu, in fact, appears to be its nearest ally, though there are points of resemblance, other than in respect to bulk, to the *Dinornithidæ*, and possibly it may be found to the *Gastornithidæ*. We may, perhaps, provisionally regard it as an ancestral form of Emeu, possibly having relations to the New Zealand group.

"Of its relations to existing forms, other than those of the ratite type which have been mentioned, it is premature to speak; such facts will emerge with greater certainty and completeness on a study of the head, the restoration of which—a long and tedious task—is approaching completion, though, unfortunately, it is in a very imperfect condition. In the meantime we believe we have, in this preliminary notice, sufficiently indicated, though in a manner less complete than we could have wished, the interesting nature of the discovery at Callabouna, not only as affording additional evidence, in so much more complete a form than has hitherto existed, of the wide range in Australia of this race of great extinct birds, but also as bearing upon the phylogenetic relations of the subclass to which it belongs, as well as, possibly, on the question of the former distribution of land in the southern hemisphere."

27. *Winge on Birds of the Danish Lighthouses*, 1895.

[Fuglene ved de danske Fyr i 1895: 13^{de} Aarsberetning om danske Fugle. Ved Herluf Winge. Vid. Meddel. fra d. naturh. i Kbh. 1896, p. 65.]

Mr. Winge's thirteenth annual report tells us that in 1895 451 specimens of birds were received from thirty of the Danish lighthouses, and referred to 51 species. Concerning them the usual particulars are given. A clearly-drawn map shows the exact position of every lighthouse.

XI.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed “to the Editors of ‘The Ibis’”:

SIRS,—In a list of Swatow and Foochow birds published in ‘The Ibis’ for 1892, I stated that *Sterna hirundo* breeds on the Swatow coast in company with *S. melanauchen*. I have now reason to believe that the birds in question were not *S. hirundo*, but *S. dougalli*. Mr. Rickett and I have lately received a specimen of this species said to have been shot about the Shanghai coast, and, so far as I can remember, it agrees with the specimens shot by me and my collector at Swatow, and which I wrongly referred to *S. hirundo*.

I am,

Yours faithfully,

J. D. DE LA TOUCHE.

Foochow,
July 30th, 1896.

SIRS,—In the last number of ‘The Ibis’ Mr. Sclater has a note on the “Nomenclature of the *Palamedeidae*.” He says that I “have lately shown (Cat. B. xxvii. p. 4) that *Palamedea* [more correctly *Parra*] *chavaria* of Linnæus was probably based on a Colombian specimen.” I must remark that I have not left the point as *probable*; Linné’s description and locality (Carthagenæ), both derived from Jacquin, being quite clear, I cannot entertain the least doubt about their applying to the Colombian Crested Screamer, and not to the Argentine representative species. Such being the case, I could not hesitate in restoring Linné’s name to the Colombian bird, to which only it belongs. If authors, beginning with Illiger (1811), have confused the two species, or have wrongly used Linné’s name for the Argentine bird, it is their fault, and, according to me, we have no right whatever to discard Linné’s name on the pretence of uncertainty. Now that ornithologists are aware that the name *Chauna chavaria* (Linn.) belongs to the Colombian and not to the Argentine bird, every possible *uncertainty* will be dispelled,

and I hope that Mr. Selater will not persist in his determination to reject the Linnean term "*chavaria*." I think that Linné's names ought to be supported with all our power, especially if they are as *certain* as the one to which I now refer.

Yours &c.,

T. SALVADORI.

Turin, Zoological Museum,
November 13th, 1896.

SIRS,—Mr. Lodge's interesting notes on the habits of some West-Indian Humming-birds, published in your last number (*Ibis*, 1896, pp. 495-519), call for a few remarks on the names of some of the species he mentions and their distribution. He seems to have examined the series of skins in the British Museum, but not to have consulted the Catalogue referring to them (*Cat. Birds Brit. Mus.* vol. xvi.). Had he done so a few slight errors might have been avoided.

The close relationship of the various forms of *Bellona* has long puzzled writers on these birds, in consequence, no doubt, of the very vague and often inaccurate localities ascribed to the specimens examined. The true state of the case is set forth in the Catalogue referred to, and it seems pretty well established that the commonest and most widely diffused form—*B. exilis*—is found in every island from the Virgin Islands, and perhaps Puerto Rico, to Santa Lucia, little variation existing between birds from any of these islands. In Barbados, the Grenadines, and Grenada, *B. cristata* alone occurs, and in St. Vincent an intermediate form, which Gould described as *B. ornata*. It is true that Gould did not know the origin of his types, but the domicile of this particular form has been clearly established by Ober and Herbert Smith. As Mr. Lodge did not visit St. Vincent he did not himself meet with the true *B. ornata*.

When in Barbados, he says (p. 505), he saw birds which he supposed to be either *B. cristata* or *B. exilis*. They must assuredly have been the former, which is the only form known to occur in that island.

In writing of *Thalurania wagleri* (p. 508) he incidentally mentions that birds in one of the Gould cases in the British Museum seemed to him to be wrongly named *Eucephala grayi*. But *E. grayi*, as Gould very well knew, is quite a different bird and well known as an inhabitant of Ecuador, and cannot be confused with *T. wagleri* by any one at all conversant with the Trochilidæ. The correct name of *T. wagleri* is *T. bicolor* (Gm.), as long ago determined by Elliot and others.

I quite agree with Mr. Lodge's remarks on the unsatisfactory nature of the plates representing Humming-birds and on the way stuffed specimens are mounted. But no representation, either as drawings or mounted skins, can give any idea of the appearance of these birds in flight, in which attitude they are most commonly seen. The best representations of resting Humming-birds that I know of, are those of Mr. Baron, now to be seen in the British Museum. Mr. Baron mounted all these birds himself from freshly-shot specimens, and the positions in which he has placed them are most life-like.

Yours &c.,

OSBERT SALVIN.

10 Chandos Street, Cavendish Square,
December 2nd, 1896.

Mr. D. G. Elliot's Expedition to Somaliland.—Our friend Mr. D. G. Elliot returned from his excursion to Somaliland (see *Ibis*, 1896, p. 427) in October last, and left London for Chicago on Nov. 14th. He achieved his main object in getting a good series of specimens of the Antelopes of Somaliland for the Field Columbian Museum (amongst them examples of the rare "Beira," *Dorcotragus megalotis*). Mr. E. Dodson, who accompanied him as collector, obtained about 300 bird-skins, the preliminary examination of which indicates that there are probably some novelties amongst them, though none of very prominent originality. Mr. Elliot, we regret to say, contracted fever on the Haud, and performed the journey of 200 miles back to the coast on a

litter, but has made a good recovery, and has left England in fair health. The following outline of his route, given to Reuter's Agency, is published in the 'Times' of Nov. 16th:—

“We left Berbera at the end of April with a caravan consisting of 68 men, all armed with Sniders and Winchester, and 56 camels, which were afterwards increased to 98, our object being to explore certain districts of Somaliland between Berbera and the river Chibele. During our stay in Africa we made three expeditions from the coast. The first, to the east of Berbera towards the Gobari plains and the range of the Golis, occupied three weeks. The second, to the south of Berbera, *viâ* Mandera and the Jerato pass of the Golis range to the south of the Toyo plain, lasted six weeks. The third expedition occupied over two months. On this journey we went from Hargeisa (about 100 miles from Berbera) and crossed the Haud Desert by a route discovered by me over the Maredleh Plain to a point 20 miles from Milmil. Altogether we were in the interior six months, and returned to Aden in October.”

Mr. Whyte's new Expedition to the Mountains of North Nyasaland.—Mr. Alexander Whyte, F.Z.S., writing from Karonga, at the north end of Lake Nyasa, on July 16th, says * :—“I have just returned from my sojourn of eighteen days on the highest range of the Deep Bay-Karonga mountains, and am much pleased with the collections made there. We all suffered from the cold, and had some bad cases of sickness; but, on the whole, the boys worked well, and I have got together a larger collection than I have ever made on any previous expedition.

“The flora of this range proved most interesting, resembling that of Mlanje, yet differing from it in many respects. I failed to find any trace of a conifer; but, on the other hand, the range is richer in heaths than Mlanje is. I fancy the three principal peaks of the range, to the tops of which I went, rise to an altitude of from 7000 to 8000 feet above the sea-level; and I thoroughly explored this end of the range,

* See Brit. Centr. Afr. Gaz., Aug. 15th, 1896.

from end to end, and I could see close at hand the mountain I explored at the Mount Waller end of the range. I cannot quote figures exactly till I go thoroughly through my collections; but of plants I have over 6000 dried specimens; of skins of birds 230; of mammals 200; of reptiles, &c., in spirits, 120; of crustacea, &c., 250; of land-shells 5000; of insects 3000; besides a series of geological specimens." These collections, Mr. Alfred Sharpe, H.B.M. Acting-Commissioner at Zomba, informs us, are now being packed for transmission to England.

Rare British Birds.—At the meeting of the Linnean Society on Nov. 5th, a specimen of the Cream-coloured Courser (*Cursorius gallicus*), which had been shot, on Salisbury Plain, at Earlstoke, on the 10th October last, was exhibited by Mr. Harting, who gave particulars of the occurrence, and stated that another example of this bird had since been obtained in Bouley Bay, Jersey.

In 'Knowledge' for November, 1896 (vol. xix. p. 251), we find the following account by Mr. Harry F. Witherby of the occurrence in Yorkshire of a specimen of Macqueen's Bustard (*Otis macqueeni*):—

"On October 17th I was walking along the sea-bank at Easington, Yorkshire, in company with Mr. Eagle Clarke, the well-known ornithologist, and Mr. Bendelack Hewetson, Jun. We all at once noticed a large bird flying low over the fields like an Owl, and being pursued by small birds. It skimmed across a high bank, and went down in a field beyond. We immediately followed it, and on arriving at the bank crept up to the top and cautiously looked over. There, in the middle of a stubble-field, about one hundred and twenty yards from us, was what we took to be a Great Bustard. We lay down and watched it with our field-glasses. It seemed quite at home, and behaved perfectly naturally. It strutted about with a stately gait, somewhat like a Peacock, and pecked at the ground here and there in an almost disdainful way. Then it began to dust itself, drawing in its head and ruffling its feathers, and spreading wings and tail. We watched it closely for quite ten minutes,

and were fascinated by its interesting ways, probably never observed in England by ornithologists before, for this grand bird was a Macqueen's Bustard, and only the third example which has visited our shores. Meanwhile two men had come on the scene with guns, and after a little manœuvring George Edwin Chubbly shot the bird as his brother, Craggs Chubbly, put it over to him. Whilst being followed it never seemed flurried. When flying, the wings of the bird were a striking black and white. The long black tufts on the sides of the neck appeared as black streaks at a distance, and were very conspicuous as the bird stood in the field.

“Macqueen's Bustard is a desert-loving species, inhabiting the steppes of Asia, and why it visits us at all is merely a matter of conjecture, but probably certain young birds wander far from their course and thus manage to reach our coast. When the feathers of the bird were turned up we found them to be of a delicate blush pink at the base, contrasting beautifully with the speckled sandy colour of the bird's back. The beak is brownish black, the legs and feet light straw-colour, and the eyes very pale straw and very bright. The length from beak to tail is $28\frac{1}{2}$ inches, the tarsus $4\frac{1}{2}$ inches, and the flexure 16 inches. The bird was a young male, and its stomach contained vegetable matter and three beetles.”

At the Meeting of the Zoological Society of London on December 1st, 1896, Mr. H. E. Dresser exhibited and made remarks on a specimen of Pallas's Willow-Warbler (*Phylloscopus proregulus*), shot at Cley-next-the-Sea, Norfolk, on the 31st October, 1896, being the first instance of the occurrence of this bird in Great Britain.

Parasitism of Cassidix oryzivora.—The last number of ‘*Timelri*’ (vol. x. new ser. p. 37) contained an article by Mr. C. A. Lloyd on “Queer Homes,” from which we extract the following remarks on the breeding-habits of *Cassidix oryzivora* (cf. *Ibis*, 1896, p. 585):—

“A cabbage-palm that I once saw was decorated in a most singular manner with the nests of the Black Bunyah (*Ostinops*

decumanus). At the end of every arching frond was attached a long purse-like nest, and the whole were arranged as symmetrically as if placed there by human hands. While speaking of the Bunyah it may be as well to note that another Hanganest, the large Black Rice-bird (*Cassidix oryzivora*), seems never to build a home of her own, but contents herself with making use of the deserted Bunyah nests in which to lay her curiously marked eggs."

Breeding-place of Ross's Gull.—One of Dr. Nansen's achievements during his recent journey in the Polar Regions seems to have been the discovery of the hitherto unknown breeding-place of Ross's Gull (*Rhodostethia rosea*). 'As we learn from the 'Daily Chronicle' of Nov. 3rd, large numbers of this rare Gull were seen in the neighbourhood of four islands (proposed to be called "Hvitenland"), situated in latitude 81° 38' N. and longitude 63° E., in August 1895. Dr. Nansen writes :—

"This, the most markedly polar of all bird forms, is easily recognizable from other species of Gull by its beautiful rose-coloured breast, its wedge-shaped tail, and its airy flight.

"It is, without comparison, the most beautiful of all the animal forms of the frozen regions. Hitherto it has only been seen by chance on the utmost confines of the unknown Polar Sea, and no one knew whence it came or whither it went; but here we had unexpectedly come upon its native haunt, and although it was too late in the year to find its nests, there could be no doubt about its breeding in this region."

New Index to 'The Ibis.'—The Index to the last three series of 'The Ibis' (1877-94), edited by Mr. Salvin, is making good progress through the press, and will, it is hoped, be ready for issue in April of this year. It will contain an index of the generic and specific names that occur in the fourth, fifth, and sixth series, and an index to the plates.

The Agaléga Islands.—We are not aware that the Agaléga Islands, which lie in the Indian Ocean south of the Seychelles, in about $10^{\circ} 50'$ S. lat. and 57° E. long., have ever been visited by an ornithologist, although they appear to have some claims to our attention. The islands are two in number. The North Island is about five miles, and the South Island about six miles in length, connected with each other by a strip of sand. They are low, but well wooded with coconuts, casuarinas, and other trees.

According to a report on the islands addressed to the Governor of Mauritius in 1893, the Agalégas “abound with game: hares, Quails, Guinea-fowls, Peacocks, and wildfowls, the Egyptian Ibis, Larks, Curlews, and various sea-birds. A great source of supply for the inhabitants is the almost inexhaustible amount of eggs of birds (Sea-Gulls) to be gathered on a certain part of the North Island in September and October every year. Acres of ground are covered with eggs and birds.”

As we are also told that the climate of the Agalégas is exceedingly healthy, the “temperature always cooled by the sea-breeze,” and, moreover, that “crime is unknown” and order always prevails, we cannot do wrong in recommending these islands to the notice of the wandering Members of the B. O. U.

Swallow-Bluff in British Columbia.—In Mr. Warburton Pike’s lately-published ‘Through the Subarctic Forest’ will be found (p. 160) a good illustration of a nesting-place of the North-American Cliff-Swallow (*Petrochelidon pyrrhonota*), situated on a bluff on the banks of the Pelly River. As shown by Messrs. Sharpe and Wyatt in their Monograph (ii. pp. 538, 539), this Swallow is abundant in many parts of Alaska and British Columbia.

The late Mr. Seebohm’s Posthumous Works.—Messrs. Pawson and Brailsford, of Sheffield, announce as nearly ready for publication the late Mr. Seebohm’s ‘Coloured Figures of the Eggs of British Birds,’ edited by Dr. Bowdler Sharpe.

It will be issued in one volume, royal octavo, at the price of £3 3s.

The 'Monograph of the Family of Thrushes' is also announced by Messrs. Sotheran and Co. It will be published in parts, and will contain altogether 141 plates drawn by Keulemans and coloured by hand; each part will contain 12 plates. This work will also be edited by Dr. Bowdler Sharpe.

List of Illustrated Ornithological Works in Course of Publication, and Dates of the last Parts issued.

- BRITISH BIRDS, their Nests and Eggs. By various well-known Authors. Illustrated by F. W. Frohawk. Part XVII. (1896.)
- DRESSER (H. E.). A History of the Birds of Europe. Supplement. Part VIII. (June 1896.)
- GIGLIOLI (E. H.) and MANZELLA (A.). Iconografia dell' Avifauna Italica. Fasc. 53. (1895.)
- LEE (O. A. J.). Among British Birds in their Nesting Haunts. Part I. (1896.)
- LILFORD (Lord). Coloured Figures of the Birds of the British Islands. Part XXXIII. (November 1896.)
- MENZBIER (M. A.). Dr. N. A. Severtzow. Ornithologie du Turkestan. Livr. 4. (1894.)
- MEYER (A. B.). Abbildungen von Vogel-Skeletten. Lief. XIX.-XXI. (1895.)
- NAUMANN'S Naturgeschichte der Vögel Deutschlands. Lief. 3. (1896.)
- NEHRLING (H.). North-American Birds. Part XV. (1896.)
- ROTHSCHILD (Hon. WALTER). The Avifauna of Laysan. Part II. (November 1893.)
- RUSS (K.). Fremdländische Stubenvögel. Band II. Lief. 14. (1896.)
- SHARPE (R. B.). Monograph of the *Paradiseidæ*, or Birds of Paradise. Part V. (1896.)
- WILSON (SCOTT B.) and EVANS (A. H.). Aves Hawaienses. The Birds of the Sandwich Islands. Part VI. (July 1896.)

XII.—*Obituary.*—DR. BROWN GOODE and AUGUSTE SALLÉ.

DR. BROWN GOODE, whose unexpected death at the early age of 45 years, his many friends in Europe will have heard of with great regret, was not, strictly speaking, an ornithologist. But as for the last nine years he had been, in the execution of his office of assistant-secretary of the Smithsonian Institution, in charge of the National Museum of the U. S. at Washington, and was unfailing in promoting the progress and improvement of the great collection of birds which it contains, some few lines in 'The Ibis' may well be devoted to his memory. Dr. Brown Goode, who was born in the State of Indiana in 1851, and graduated in 1870 at the Wesleyan University of Middletown, Connecticut, joined the U. S. Fish Commission, first as a volunteer under Professor Baird, and subsequently became one of its officials. Under such circumstances he naturally devoted himself chiefly to ichthyology, and was the author of several excellent publications on Fishes and Fisheries. He was also U. S. Commissioner to the Fisheries Exhibition at Berlin in 1880, and at London in 1883, on which latter occasion several of us had the pleasure of making his personal acquaintance. Recently, in connection with his office as head of the U. S. National Museum, which he assumed in 1888, he devoted much of his time and talents to the study of the principles of museum administration, and on this subject prepared an excellent memoir, which has been reprinted from the Annual Report of the Museums Association for 1895*. In the course of this essay he points out that the degree of civilization to which any nation has attained is best shown by the character of its public museums and the liberality with which they are maintained. To borrow the words of one of our contemporaries, Dr. Brown Goode "combined in a rare degree administrative ability with talent as a scientific investigator, while a charming personality smoothed his way to success."

AUGUSTE SALLÉ.—The name of Auguste Sallé, naturalist and traveller, should have been included in our obituary for

* 'The Principles of Museum Administration.' By G. Brown Goode, M.A., LL.D. York: 1895.

1896, but our notice of him has been unavoidably delayed. He died at his residence in Paris (13 Rue Guy-de-la-Brosse) on the 5th of May last, in the 76th year of his age. Sallé was primarily an entomologist, and accumulated an excellent series of Central-American Coleoptera, which were eventually transferred to Messrs. Salvin and Godman, and formed part of the materials for the 'Biologia Centrali-Americana.' But Sallé was also a diligent collector of birds, and made excellent skins. In 1849 he visited San Domingo, and obtained a series of birds which were described by Selater (P. Z. S. 1857, p. 230), with Sallé's field-notes appended. The principal and last expedition of Sallé was that made to Mexico, 1854-56, in company with Mr. A. Boucard, the well-known naturalist. He then explored the States of Vera Cruz and Puebla, chiefly the former. A Mexican friend and correspondent (M. José Pieta) put his hacienda of Tospam, near Cordoba, at Sallé's disposal. It was there that most of the collections were made. Several expeditions were carried out from Tospam to Jalapa, to the Volcan de Orizaba, to San Andres Chalchicomula, and to other places, and many were the new species of Land-shells, Insects, Reptiles, Fishes, Birds, and Mammals discovered during these collecting tours.

The birds obtained on this occasion were mostly determined and described by Selater*.

The following birds'-names commemorate some of the discoveries of Auguste Sallé :—*Phaethornis augusti* (Bourc.), 1847 ; *Crypturus sallæi* (Bp.), 1856 ; *Granatellus sallæi*, Sel., 1856 ; *Chrysotis sallæi*, Sel., 1857 ; and *Cyrtonyx sallæi*, Verr., 1859.

Sallé, who was personally well known to many of us, was most genial and obliging in his disposition, and always ready to help his English friends. He spoke our language excellently, and was also a good Spanish scholar.

* See "Catalogue of Birds collected by M. Auguste Sallé in Southern Mexico, with Descriptions of new Species" (P. Z. S. 1856, p. 283); and "List of Additional Species of Mexican Birds obtained by M. Auguste Sallé from the environs of Jalapa and S. Andres Tuxtla" (P. Z. S. 1857, p. 201).

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XIII.—*Ornithological Results of a Naturalist's Visit to the Coast-region of South Guyana.* By Dr. EMIL A. GOELDI, C.M.Z.S., Director of the Museum in Pará.

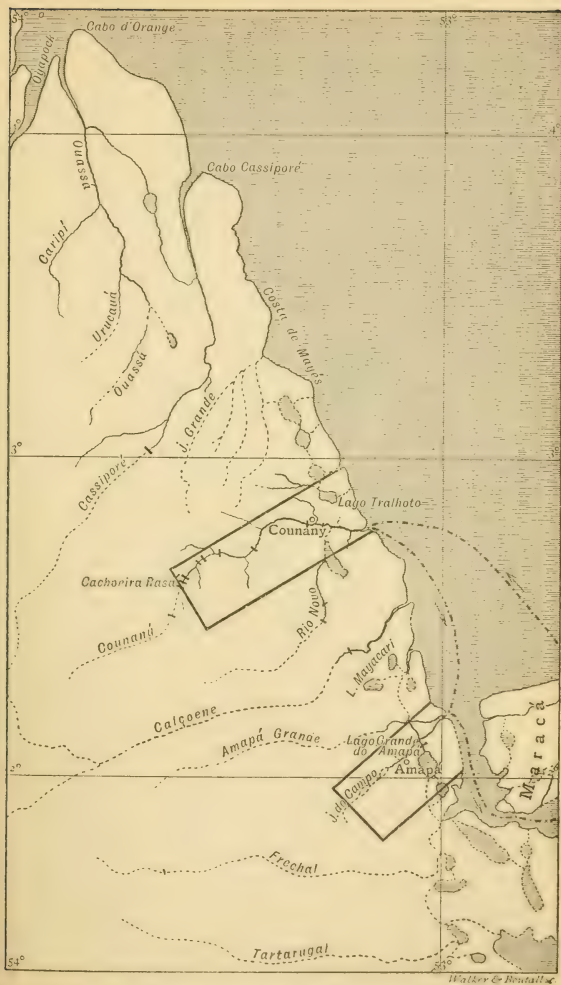
LEAVING Pará during the night of the 7th of October, 1895, we began, on board the small steamer 'Adjudante,' of the Amazon Steam Navigation Company, our journey to Guyana, favoured by very fine weather. The outside-route along Marajó and the Atlantic coast being at the same time disagreeable and dangerous, we sailed on the inside-way around this large island, passing through the celebrated "Channels of Breves," with their charming vegetation, which struck my countryman Louis Agassiz in 1865 with such admiration. During the following days nothing was observed, from the ornithological standpoint, that deserves especial attention, except, perhaps, some fine specimens of *Urubitinga schistacea*, circling above the shore-forests of the delightful "furos" (channels), and a small flight of *Nauclerus furcatus* playing in the air near the island-group called São Salvador. One can hardly be tired of observing the elegant evolutions of this really masterly flier.

Early on the morning of the 11th we arrived in sight of the coast of Guyana, near the mouth of the river Couraný. Approaching the shore we saw before us an interminable

forest of moderate height and transparent branches and foliage—the “siriubál” (*Avicennia*) forest, very characteristic of the littoral landscape of Lower Amazonia and Guyana. A large number of white and moving points in the wide mud-zone which girdled the shore-forest—we had just arrived at low-water-time, and had therefore to cruise in front of the mouth of the river—were soon recognized as formed by rows of small white Herons (*Ardea candidissima*). Entering at length into the river, our steamer stopped, after somewhat difficult navigation, for an hour and a half at a place called “Igarapé da Roça,” in sight of the first cascade, which intercepts a free navigation of the upper course of the Counany River. Waiting for boats during the greater part of the day, we had sufficient time to get acquainted with the general bird-life of the surrounding river-landscape.

On the left side, upon one of the before-mentioned siriúba-trees, we perceived the continuous going and coming of a couple of the elegant and audacious *Ictinia plumbea*, and soon discovered the nest in a fork of a tree, perhaps some 20 mètres above water-level. Though the tree was big, we cut it down, and after an hour’s labour we had not only the nest, with a young bird, but also one of the parents. The nest is a badly-formed structure of single sticks. The young was still entirely in the down, of white colour, and had a greyish-brown iris, whereas the old one, as known, has a very beautiful cherry-coloured iris. This chick was supposed to be about a week old. It was the first time I ever met with the nest of this fine bird of prey, and if, as it seems, Schomburgk’s “vague informations” (‘British Guiana,’ iii. p. 735) are the only authority upon the nesting of *Ictinia*, very few ornithologists must have seen it. The eggs, I believe, remain still unknown.

Some time afterwards we observed a small Swallow several times entering a hole in a tree-stump which stood in the stream. I easily recognized it to be *Tachycineta albiventris*. The hole had certainly been made by some small Woodpecker, and was now occupied by the graceful Swallow, with his glittering greenish back, for breeding purposes. I had no



COAST-REGION OF SOUTH GUYANA.

opportunity of making a thorough examination of the stump*.

A shrub laden with half-a-dozen hanging bag-nests, only a few steps distant from our steamer, was the animated place of exercise for a colony of *Cassicus persicus*. They were also breeding at this time. I got several eggs from the nests, and among them some slightly different in colour and shape, which evidently belonged to another species with Cuckoo-like habits. I shall return to this subject on a future occasion.

The Macaws are certainly some of the most brilliant figures of the Equatorial forests of South America, and it will be easily understood that we were surprised to find here, on the coast of Guyana, one of the rarest species, the blue Arára (*Ara hyacinthina*), under circumstances which allow us to call it quite a common bird in these regions. In a few hours we noted several dozens passing over our steamer. On one occasion we saw eight individuals, forming four couples, together at one time. The natives, without exception Brazilians of the State of Pará (at least along the Counaný and the northern coast-region), spoke of the blue Arára, which is rather a scarce species in zoological gardens, as a bird of migration ("passaro de arribação"), common in the dry season and absent during certain months. Soon afterwards I had occasion to convince myself personally that *Ara hyacinthina* was really breeding at this season in the coast-zone of Southern Guyana.

What we saw in a few hours on the Lower Counaný was, indeed, sufficient to increase our hopes of interesting ornithological results during a few weeks' residence in the higher regions of the river. With the next tide we arrived in the same night at the village of Counaný, charmingly situated

* The nesting and breeding of this Swallow have been observed by Prince Max. zu Wied on the coast between Bahia and Rio [*Hirundo leucoptera*, Beitr. iii. p. 364], and more recently by E. Bartlett on the Ucayali River (Sharpe and Wyatt, 'Monograph of the Hirundinidæ,' text, page 139). The particulars seem to be the same as those observed by me.

on a granitic hill on the right hand of the stream, which measures here $43\frac{1}{2}$ m. in breadth, and is bordered by elegant assahý-palms, tabócas (bamboo), and anhingas (*Montrichardia*), the favourite food of the Hoatzin.

In this village we took up our headquarters for a fortnight. Numerous trips were made on every side. We visited alike the forests and "capoairas" (old plantations) behind the village, the savannas beginning some miles distant on the right and left hand of the stream, and the forests on the river above and below. To ornithology principal attention was paid by the zoologists of our small expedition. I think that my readers will agree with me that a chronological order will perhaps be the best way to give a summary idea of our work and results in Counaný. At the same time it may be of advantage to compare the features of the ornis of South Guyana with those of the ornis of Pará and its neighbourhood.

On the 12th October (the day of our arrival), naturally enough, scientific work could not begin at once. But we obtained during an afternoon walk along the river-border specimens of *Tachycineta albiventris* and of a Heron (*Ardea virescens*), the former usually seen sitting on the posts and trees in the water, the latter occupied in the mud between the boats in the harbour.

The next morning we visited the forest between the main river and its tributary, the Igarapé de Hollanda. I heard and observed different Pipridæ, called "Araparú," as in Pará, especially *Chiromachæris gutturosa*, several small *Thamnophili*, and a Thrush, to judge by its song, the same species as in Pará, the common "Caranué" (*Turdus albiventris*). Several small flights of blue Aráras were pursued without result; they always had the opportunity of discovering us before we could see them on some of the highest trees, where they were evidently occupied on the fruits. From a companion I got a nice specimen of *Harpagus bidentatus*, three of *Columba speciosa* ("Troçál"), and two of the splendid *Galbula viridis*, the first I had seen of this species. From another of our company, who returned from a walk

down to the Igarapé da Roça, I obtained three young individuals of a small Plover, two of *Tachycineta albiventris*, and one of *Atticora fasciata*. This lovely minute Swallow I had also never seen before alive, but I recognized it easily, as I remembered the description and figure in Sharpe and Wyatt's 'Monograph of the Hirundinidæ.' Night-Herons and Sun-Bitterns (*Eurypyga helias*) were observed, and the smaller "Anú" (*Crotophaga ani*) was everywhere heard in the tabócas and gardens behind the village. A boy brought us four eggs of *Cassicus persicus*.

Another forest, situated rather more in a westerly direction from the village of Counaný, was visited on the 14th October. Here, in a few minutes, we had discovered a fruit-tree, where we noticed a continuous coming and going of many good birds, small and large. Soon we shot *Rhamphastos erythrorhynchus*, the large "Tucano de peito branco"; two individuals of *Monasa nigra*, the "Tangurú-pará"; a Woodpecker new for us, *Celeus elegans*, similar to the Pará form, *C. jumana*; *Tityra cayana*, and a yellow-breasted "Surncuá" (*Trogon*), this latter unfortunately in a bad state. On returning home I had the great pleasure of meeting with an uncommon Formicarian, of a slaty black, with a white stripe over the eye (*Hypocnemis leucophrys**). Every morning and evening we heard in the neighbouring forests the loud cry of a species of "Aracuã" (*Ortalis*) and the singular sound of the Trumpeter-bird (*Psophia*). Native hunters assured me that it was the "Jacamim de costas cinzentas," i. e. *Psophia crepitans*, represented in Pará by the species with brownish wings (*P. obscura*)†.

The next day we were again hunting in the vicinity of "Igarapé de Hollanda." Besides the white-breasted

* A specimen of this has been identified for me by Mr. Sclater, and I seize this opportunity to observe that I am much indebted to this ornithologist for constant help in determination and verification of materials and collections made in Brazil.—E. A. G.

† [Dr. Sharpe (B. M. C. xxxiii. p. 281) has united this species to *Ps. viridis*, but I am by no means convinced that this is correct.—P. L. S.]

Tucáno, *Tityra cayana*, and *Monasa nigra*, which we noted frequently, we met everywhere the "Cri-cri-ó" (*Lathria cineracea*), a bird very well known to us as one of the most striking figures in the wet "igapó-forests" of Pará and Lower Amazonia. Its indigenous name is onomatopoeic, but its strident cry will be better given by the syllables *hū-hū-qui-quiū*! We saw also different smaller Pipridæ (*Chiro-machæris* and *Pipra*), a *Bucco* of median size (it seemed to be *B. tamatia*) on a dry branch, and flights of the common Pipira of Pará (*Rhamphocælus jacapa*). We shot an adult individual of *Ictinia plumbea*, and several "Tangurú-pará" (*Monasa nigra*), in despite of the Amazonian legend, which declares this bird to be enchanted and warns one not to kill it, because, if the hunter does so, he will be unfortunate and probably burst his gun. Another most interesting Ant-Thrush was obtained, never met by us in Pará (*Myrmeciza pelzelni*), a dark chocolate-brown Formicarian, with black throat and breast, bordered with white, and two rows of clear fulvous spots on the wing-coverts. This very beautiful bird was found near the ground in one of the most obscure and entangled places of the forest.

On some orange-trees in the gardens we observed the magnificent *Cæreba*, not quite blue yet at this time. My Pará bird-hunter, who accompanied me on this excursion, brought me on the same evening an agreeable surprise in the shape of a specimen of *Falco rufigularis**, the celebrated "Canaré" of the Amazonian people, who attribute to this very elegant and rapid Falcon several astonishing qualities, to which I may refer at another time.

Returning the next day to the same locality, I made all possible efforts to obtain an example of *Ara hyacinthina*, but again without success, because these intelligent birds, though their cries are awful when they are alone and unobserved, keep perfectly quiet when opening hard nuts on some gigantic tree. On the other hand, I was somewhat indemnified by having the opportunity of witnessing the

* [*F. albigularis*, Sharpe, B. M. C. i. p. 401. But cf. Gurney, Ibis, 1882, p. 159, on this name.—P. L. S.]

graceful play of *Chiromachæris gutturosa*. This dancing is almost the same as that of *Chiroxiphia caudata*, which I have already observed and described. Along the river I also saw a few specimens of the Common Vulture, *Cathartes fædens*. I was very much pleased to hear nearly every morning and evening the song of the "Urú" (*Odontophorus guyanensis*), the Amazonian Partridge, represented in Southern Brazil by *O. dentatus*, called "Capoeira." The son of one of our neighbours brought home from a hunting-trip a specimen of the "Aracuã" (*Ortalis motmot*), and one of a large *Tinamus*, designated by the natives "Inhambu-serra," and by my Pará hunter as "Inhambú-toró. In general aspect and the serrated scales of the posterior face of the tarsus it resembled *T. solitarius*, and I do not doubt that the specimen belonged to this species; unfortunately the specimens were in too bad a state for skinning.

Every night we heard Goatsuckers around the village; the cry was that of *Nyctidromus guyanensis*.

The 17th and 18th October were dedicated to an exploration of the "Lago do Tralhoto," a lake indicated on all geographical maps, but, as regards its exact situation and extent, unknown even to the inhabitants of Coumaný. I do not intend to enter on a detailed description of the painful journey there through the forests and the savannas, as from an ornithological standpoint there would be very little to say about it. After an awful march of more than eight hours on bad paths and through savannas literally glowing with the hot sun of Guyana, we arrived at the mysterious lake, and, though very tired, we could not resist an immediate examination of this wonderful freshwater-basin. It is a true Eldorado for a hunter. I have never met with a spot in which the animals showed such a complete absence of the fear of mankind, such a truly paradisiacal state, as here on the borders of this unknown forest-lake, which is probably only the most southern of a series of similar lakes distributed over the unexplored region between the mouths of the rivers Coumaný and Cassiparé. The blue Aráras perched every moment in flights of from four to six individuals on

the majestic mirity-palms on the opposite border. We saw them breeding in holes in these high stems, the breeding bird being readily detected from afar by its enormous tail, for which the hole naturally does not offer sufficient room. A large number of Parrots and Parraquets were also breeding in similar places, the former, like the Aráras, in the hollows of the palm-stems, the latter mostly in burrows in the white-ants' nests. Storks, Herons, Kingfishers, and Cormorants enlivened the vegetation in a wonderful and surprising manner. Besides these aquatic birds, there were an incredible number of Hoatzins, Pigeons, and smaller birds of different kinds, while the Howlers and Squirrel-monkeys looked at our canoes with astonishment. In less than an hour we had a famous collection, and it was by no means easy to select what ought to be saved for science, and what could be delivered up to the cook. For the first purpose I chose, after some reflection, five specimens of *Agamia agami*, a magnificent Heron closely allied to our European *Ardea purpurea*, but even more richly coloured, and especially remarkable for its wonderful neck-feathers and its enormously long bill. We had among the specimens of this species three adult males, one female, and one young male—all shot in a quarter of an hour! I selected also two fine individuals of *Plotus anhinga*, which showed interesting changes of plumage, some of *Phalacrocorax brasilianus*, and two or three of *Galbula viridis*, which I found perched in confidence near the primitive cottage of a pirarucú-fisherman. Several of the blue Aráras and various good aquatic birds had been stolen by the alligators, which inhabited the idyllic lake in enormous numbers. Till very late in the night all our people who were able to aid in the taxidermic service were fully occupied. As a certain number of skins remained unfinished, we made an experiment with salicylic acid applied on the fleshy parts of wings and legs, and it may be said with excellent results. All these skins arrived perfectly sound the next day in Coumaný, and were finished at leisure on the 19th and 20th October.

Striking is the difference in the cry of *Rhamphastos erythrorhynchus* compared with that of *R. ariel* and *R. discolorus*.

It is particularly soft, nearly melodious, and may be tolerably interpreted by the syllables *tiu-tiu-fü-fü-fü*. The White-breasted Tucáno is confined to river-borders and wet "igapó-forests"; in localities far from water you will not meet with it. *Monasa nigra*, the "Tangurú-pará," sings *ho-tiü, ho-tiü* continuously.

The 21st and 22nd October were employed on an exploration of the upper course of the river Counany. It was an instructive and successful canoe-journey, which left on us a deep impression of the richness of flora and fauna of this district, as well as of the beauty of the landscape. The water here, instead of being loamy and dirty, becomes clear and transparent; instead of floating imperceptibly along, it jumps gaily over the numerous cascades formed by granitic barriers which intercept the bed of the river, and, as we advance, form more and more serious obstacles to free navigation. An infinity of pretty freshwater fishes, such as "matupirýs" and "acarás," can be distinguished swimming around and beneath the boat, and the majestic forest vegetation of both shores echoes with the voices of interesting, beautiful, and rare birds. Here we met with several Yellow-headed Vultures (*Cathartes urubitinga*) and with many species of larger and smaller diurnal birds of prey, such as *Ictinia* and other Falcons. On some of the gigantic trees (such as "Sumaúmas") we observed charming societies of Tucános (*Rhamphastos vitellinus* prevailing here over the white-breasted *R. erythrorhynchus*), Parrots (such as *Chrysotis farinosa*, the "Moleiro," which was very frequent), *Ostinops*, and Pigeons of different species, sometimes associated with smaller or larger families of howling monkeys. Of *Ostinops* we noted a flight of 30, 40, and more individuals. Here, also, we had again many occasions to verify the intelligence of these Cassicine birds in choosing for their colonies of hanging nests the extremities of branches vigorously defended by strong colonies of wasps. In Brazil, as well as in Guyana, the inhabitants state that these birds, when attacked, fly intentionally against the wasps' nest, in order to direct the irritation of their allies upon the common

enemy, be it man or some carnivorous animal. *Ostinops*, when in society and in good humour, sometimes utters a most striking song, comparable only to the ringing of the goat-bells heard in the Alps of Switzerland. Blue Aráras were often seen flying high over the river from one shore to the other.

Along the river we noted among the water-birds a small *Tringa*, the same as was mentioned before, generally in companies of from two to four individuals, rising, on the approach of our canoe, with a melodious *fi-fi, fi-fi*. Now a White Heron (*A. candidissima*), then a Blue Heron (*A. cærulea*), and from time to time a Scarlet Ibis (*Ibis rubra*) is seen. Constant companions were the Kingfishers, the large *Ceryle torquata*, generally perched on some overhanging branch, being the first to give the sign of alarm with his strident cry, which is like *kreh, kreh, kreh*, &c. I was much pleased to note here, besides the four species of *Ceryle* spread all over Brazil, a fifth species, although not very common, the *Ceryle inda* (sive *bicolor*).

Exceedingly frequent we found the two Swallows already mentioned—*Tachycineta albiventris* and *Atticora fasciata*. Sometimes individuals of both were perceived at the same time, but more often we saw one, and a moment after only the other species. As it seemed to me, *Atticora fasciata* kept to special localities, where there were a somewhat elevated shore and high earthbanks. At such places the banks were full of small holes, which were probably made by the Kingfishers and Shore-Swallows*.

After a day's navigation up stream we arrived on the "Cachoeira Rasa," a granitic barrier of successive terraces extending over near a kilomètre, and therefore a serious obstacle for a canoe. Here is the last human residence, and the limit between the known and the unexplored course of the Upper Counany. Not being sufficiently equipped for an exploration beyond this cascade, I had to remain here, and

* I am convinced that *Atticora fasciata* was breeding there and at that season. See Sharpe and Wyatt, 'Monograph of the Hirundinidæ,' p. 495.

was obliged to return the next day. But this very interesting locality furnished us on the same evening with several birds new to us. Very numerous up here were two Pigeons—the magnificent *Columba speciosa*, perhaps the brightest of the South-American species, and *Columba rufina*. Descending the river next morning I was much pleased with a flight of *Derophtus accipitrinus*, the Collar-Parrot, called “Anacã,” one of the most aberrant of the New-World psittacine forms, reminding one of an Australian Cockatoo. Everything is aberrant in this bird, even its cry, which is a loud *kía-kía-kía-güi-güi-güi*, and different from that of any other neotropical Parrot. I believe it is the first time that this species has been noted in the South-Guyana coast-region. At another cascade (a really remarkable place for Podostomaceæ, especially for the splendid *Mourera fluviatilis*) we collected examples of *Eurypyga helias* and *Aramus scolopaceus*.

Leaving our northern headquarters in Counaný on the 24th October, the steamer ‘Adjudante’ brought us to Amapá, after a somewhat troublesome course along the coast. In Amapá we spent another fortnight. My remembrances of this unhappy and pestilential marsh-region are exceedingly disagreeable. Bad fevers struck down my companions one by one; out of six I had the luck to be the only one who escaped untouched. Though most of them recovered themselves slowly towards the end of our residence, I was seriously hindered in the execution of our programme, and my zoological researches suffered also. I regret it the more, as the region is interesting from the ornithological standpoint, and may be called very rich as regards the water-birds.

The village of Amapá (as will be seen by the map, p. 151) is distant from the coast between 70 and 80 kilomètres, and is situated on the right bank of the “Igarapé do Campo,” an affluent of the “Amapá pequeno.” The actual village, erected, as we discovered, on an old Indian burial-place, suffered very much from the recent armed invasion of some French soldiers and the subsequent massacre on the 15th May, 1895. On the front of it is a river, certainly 30 m. wide, but almost impracticable, even for canoes, during

greater part of the day; on both sides, right and left, lies interminable "siriúba"-forest mixed with "anhinga,"—hot, marshy, and inhabited by myriads of furiously biting mosquitoes. Behind the village is dry forest for a kilomètre or two, where reasonable collecting should be possible if mosquitoes were less numerous, and if the paths were not sown with spring-guns armed for the destruction of *entías* and *pacas*. The nearer part of this forest is somewhat lighter, and has the much promising name of "bosque."

Almost every morning and evening I visited the "bosque" and the neighbouring parts of the high forest. I observed regularly and collected there examples of *Ibycter chimachima*, *Asturina magnirostris*, *Chrysotis amazonica*, *Brotopogon virescens*, *Bucco tamatia*, *Galbula viridis*, *Ceophlæus lineatus*, *Chrysoptilus punctigula*, *Celeus flavus*, *Dendrobates* sp. ind., *Saltator superciliaris*, *Turdus albiventris*, *T. gymnophthalmus*, *Thryophilus leucotis*, *Thamnophilus doliatus*, *Attila thamnophiloides*, *Formicivora grisea*, and *Glyphorhynchus cuneatus*. I noticed also the delicate *Polioptila buffoni*, *Lathria cineracea*, and a yellow-breasted *Trogon*, without getting good skins of them. Among the favourite spoils of native bird-hunters I often noted *Rhamphastos erythrorhynchus* and *Ortalia motmot*. Every night, especially when there was moonlight, the cry of *Nyctidromus guyanensis* was heard on the roads around the village, and that of *Nyctibius grandis* in the siriubál. Once I heard of some specimens of *Vanellus cayennensis* being in a plantation very near the village. The only species entirely new for me alive was *Turdus gymnophthalmus*. I had never before seen the "Bare-eyed Thrush," and I doubt whether it has been observed in any region southward of Trinidad and Cayenne. The naked space around the eye is yellow in life; it is impossible to confound this well-marked Thrush with any other neotropical species.

On the orange-trees in the village I saw and heard every moment, even during the hottest hours of the day, a number of common birds also met under similar circumstances in Pará, such as *Tityra cayana*, *Todirostrum maculatum*, *Myiodynastes audax*, *Empidonotus varius*, *Myopatis semifusca*,

Myiozetetes sulphureus, *M. similis*, *Tanagra episcopus*, and *Rhamphocælus jacapa*. On the assabý-palms, banana-trees, and siriúbas along the river sat *Spermophila albigularis*, emitting its melodious *fi-fi-fi*; one or more individuals of *Ostinops decumanus*; and flights of always busy and chattering *Cassicus persicus*, which had a numerous colony on a high siriúba-tree near the harbour. From time to time I saw flocks of *Brotogerys virescens*, the very sociable "Periquito estrella," so common all over Lower Amazonia and Southern Guyana. The bird, however, which most interested me was the *Pachynus brachyurus*, a short-tailed and corpulent green Parrot, of which a flight of some 20 individuals perched (the 30th October) on a siriúba. Unfortunately I got one specimen only of this species, which is not found, as I know well, after nearly three years' residence, in the vicinity of Pará.

In the neighbouring "anhinga," in the morning and evening, often was heard the song of the "Saracúra"—an *Aramides*, probably *A. chiricote*—and during the hours of low water there were always walking in the mud of both sides of the river White Herons and Scarlet Ibises, besides the common "Urubú" Vultures (*Cathartes fætens*). Among the Swallows we observed *Progne chalybæa* and *Progne tapera* in the village, and *Tachycineta albiventris* on the river.

A highly interesting excursion was made on the 4th and 5th November to the "Lago Grande do Amapá" (see map, p. 151). Leaving the village of Amapá in the morning on board of a large boat, transformed *ad hoc* into an Amazonian "igarité," we entered the "Rio dos Bagres" and crossed the large lake during the afternoon of the day. Scarlet Ibises, Cormorants (*Phalacrocorax brasiliensis*), Snake-necks (*Plotus anhinga*), and Herons, white and blue, were numerous along the river. Remarkably frequent were two small water-birds, forming clouds of thousands of individuals. One of these was a small Sandpiper (I think *Tringa minutilla*), the other a small but very pretty Shore-Plover (certainly *Ægialitis semipalmata*). It will give some idea of their multitudes to say that we obtained 182 individuals of these two species as

result of only seven shots, besides the number of wounded that escaped capture. Sandpipers, Plovers, and milk were our only articles of diet during these two days.

Crossing the lake, which is excessively shallow and studded with newly-made islands of marsh-grass, we were surprised with the incredible number of wild Ducks (*Dendrocygna discolor**, *D. viduata*, and *Cairina moschata*) which we saw. White Herons were here in swarms, and Blue Herons, Spoonbills (*Platalea ajaja*), and "Magoarýs" (*Ardea cocoi*) were disturbed every moment. Besides these arose flights of from 20 to 40 individuals of the Scarlet Ibis in every sort of plumage, the adult and quite red ones being usually separate from the younger and dark-coloured.

The borders of the lake were occupied with a large girdle of water-lilies (*Nymphæa rudgeana*), inhabited by many families of *Parra jacana*. It was not easy to get our boat through this girdle of leaves, and hours of hard rowing and all our united efforts were necessary to make a direct distance of a few kilomètres.

It was nearly evening when we reached the cattle-settlement of one of our guides and boatmen, two primitive cottages covered with palm-tree-leaves. We were struck with the resemblance of the landscape around this "sitio" with that of the campos-region in the eastern and northern part of the island of Marajó, and with the physical characters of the interior of Mexiana, as described by Wallace. The bird-life offered numerous similarities of parentage. Thousands of Ducks flew at different heights over our heads, endeavouring to regain the reedy meadows on the borders of the lake. Alternating with the Ducks passed flights of the large "Passarão" (*Tantalus loculator*), and Ibises and Spoonbills, these two generally observing a cuneiform arrangement. The Musky Duck (*Cairina moschata*) is common in this

* I have materials for a special note on the nesting of *D. discolor*, and I believe that their publication may be of interest to ornithologists, as the specific distinctness of *D. discolor* and *D. autumnalis* will become certain only on the elucidation of the whole life-history of both species.—E. A. G.

region; during the moulting-season ("desaza") even adult specimens are frequently captured by the "vaqueros," who like to employ their dogs for this purpose. In the same manner they obtain during the breeding-period lots of young *Dendrocygna* and *Querquedula brasiliensis*, called "Ananahy," as in Pará and Marajó. I was informed that the "Flamingo" (*Phænicopterus ignipalliatu*s) is frequent in the marsh- and lake-region of South Guyana, especially along the Cabo do Norte, between the mouth of Araguari and Maracá, and that it breeds there; but during my residence at Amapá I did not observe a single individual.

In the reedy borders I obtained *Donacobius atricapillus*, here called "Batuquíra," several specimens of *Himantopus mexicanus*, *Totanus melanoleucus*, *T. flavipes*, and *Charadrius virginianus*, welcome water-birds for our collection. Gulls were not very numerous or represented by many different species, but I brought from this locality one specimen of *Sterna aranea*.

In the low campos-grass behind the "sitio" I was much pleased to meet with the splendid *Leistes guyanensis*, with its bright crimson breast-cloth; it is called "Tém-tém do Espirito santo" or "Policia Inglesa," alike, over all Lower Amazonia. In the same place I observed the common "Vira-bosta" (*Molothrus atro-nitens*), and the elegant and charming campos Pigeon, *Uropelia campestris*. *Zenaida maculosa* was numerous on the spare trees, which are low and flat-shaped, as is the rule in campos-regions. We observed also *Chamæpelias talpacoti*, *Leptoptila rufaxilla*, *Arundinicola leucocephala*, *Gymnomystax melanicterus*, and a diurnal bird of prey, with white abdomen and dark head, which was, I suppose, *Tachytiorchis albicaudatus*. The "Lago Grande do Amapá" is certainly a splendid region for ornithology, but the difficulties of life there are enormous. Returning from the lake the next day, I shot, near the mouth of the lake on the "Rio dos Bagres," two individuals of *Agelaius icterocephalus*, a fine Icterid with black body and yellow head, which until now I had met with only on the Atlantic side of Marajó, but nowhere around Pará.

Aráras I saw in Amapá only once ; a couple flew over the village on the morning of 7th November. But the number of the Amazonian Parrots (*Chrysotis amazonica*) which passed twice every day over the village exceeds belief. In the morning they came from the siriúba-forests on the mouth of the Amapá River. Hungry as they were, I always saw some small groups settle on the high trees in the before-mentioned "bosque." But they were certainly in search of the fruit-trees scattered over the forests on the upper course of the river. All the individuals I shot had, at that time, the crop filled with a bluish, pulpy mass, which we easily recognized as formed by the pericarp of the Umirý-cherries (*Humirium floribundum*). In the evening they returned in the contrary direction, in search of sleeping-quarters in the siriúba. Between 5 and 6 o'clock in the evening conversation was sometimes impossible in the village until the clouds of Parrots had passed out of sight. If one Parrot is able to produce an infernal clamour, think of the noise produced by an uninterrupted chain of hundreds and thousands of these criers !

Our collection, and these pages, which are written after a study of it and of my field-notes, may give a tolerable idea of the ornithological features of this part of Southern Guyana, which had never before been visited by any naturalist. From Couanáy I brought home to Pará 50 skins of birds, representing 30 species ; from Amapá 63 bird-skins, representing 42 species—making a total number of 113 individuals and 72 species.

But I cannot look on this result, relatively successful, without profound grief. The young man who had the principal share in making it—Max Tauner, my countryman and the taxidermist of the Pará Museum—died from the effects of the Amapá fever on the 14th of November, 1895, on board our steamer 'Adjudante,' when we were just in sight of the city of Pará.

October, 1896.

XIV.—*Field-Notes on the Birds of the Estancia Sta. Elena, Argentine Republic.*—Part IV.* By A. H. HOLLAND.
With Remarks by P. L. SCLATER.

[MR. HOLLAND'S field-notes on the present occasion relate to 15 species. I have carefully examined the specimens, and append remarks where they are required. As will be observed, the Cormorants of Argentina still want further attention before we can make them out.—P. L. S.]

1. *MIMUS TRIURUS* (Vieill.). (Arg. Orn. i. p. 8.)

I found this species breeding here last year (1895) in November. The nests were placed in thistle plants, some three feet off the ground, and composed of roots, twigs, and hay, lined with fine grass and a few hairs. The eggs are three in number, long in shape, of a pale bluish green, uniformly covered with minute spots of pale rust and faint purple-grey.

2. *PHRYGILUS CARBONARIUS* (d'Orb. et Lafr.). (Arg. Orn. i. p. 54.)

Male, Oct. 13th, 1895. Legs straw-colour; beak yellow; iris brown.

This, I believe, is *P. carbonarius*. It was with a flock of Chingolos, and probably had stayed to rest while migrating south.

[This is the only specimen of *Phrygilus carbonarius* I have seen, except the single example in the Brit. Mus., with which I have compared it. See B. M. C. xii. p. 791.—P. L. S.]

3. *ZONOTRICHIA HYPOCHONDRIA* (d'Orb. et Lafr.). (Arg. Orn. i. p. 60.)

Female, Oct. 3rd, 1895. Legs brown; iris hazel; beak horn-colour, under bill slate-colour.

I found this bird feeding on the ground along the edge of some slight undergrowth of willows in company with several

* See Part I., *Ibis*, 1893, p. 483; Part II., *Ibis*, 1895, p. 213; and Part III., *Ibis*, 1896, p. 315.

other Finches. It is a shy bird and not easily observed, and probably passes here only on migration.

[Likewise a rare species. There are two Bolivian skins in the Brit. Mus. See B. M. C. xii. p. 636.—P. L. S.]

4. *TÆNIOPTERA MURINA* (d'Orb. et Lafr.). (Arg. Orn. i. p. 119.)

A winter visitor, living about the plantation around the house, where it is constantly seen perched on some slight elevation, such as a low bush or tall weed, on the watch for insects, which it catches on the flight. Sometimes, however, it feeds on the ground for a lengthy period, in the manner of *Machetornis rixosa*.

5. *CNIPOLEGUS ANTHRACINUS*, Heine. (Arg. Orn. i. p. 126.)

A female, March 22nd, 1896. Legs black; iris black; beak black.

A shy visitor in the winter-season, living amongst the hedges or other thick plantation.

6. *CNIPOLEGUS HUDSONI*, Scl. (Arg. Orn. i. p. 126.)

Two males, Oct. 3rd, 1895. Legs black; iris hazel; beak blue, tip black.

A spring visitor, passing in migration and living among the willow trees, whence it makes short flights after insects.

7. *HAPALOCERCUS HOLLANDI*, Scl. (Ibis, 1896, p. 316.)

This little Tyrant, of which I sent a specimen in the previous collection, is a summer visitor, and breeds here, living in pairs among the weeds and feeding on insects. Its flight is undulating. Its cup-shaped nest, composed of fine dry grass interwoven, without other material, is a very open structure, so much so that one can see through it either way. It is suspended from several weed-stalks by a few spiders' cocoons.

8. *ANÆRETES PARULUS* (Kittl.). (Arg. Orn. i. p. 141.)

This is a summer visitor and breeder, living in pairs among the weeds.

9. *HYDROPSALIS FURCIFERA* (Vieill.). (Arg. Orn. ii. p. 15.)

I found a nest of this Goatsucker last November. It was placed on the bare ground, where the bird had scraped a slight hollow underneath some willow trees, and contained two eggs of a dull creamy white colour, profusely marked with lines of pale brown and dark grey.

[See Mr. Aplin's notes on the breeding of this species in Uruguay and the figure of its egg, *Ibis*, 1894, p. 188, pl. v. fig. 5.—P. L. S.]

10. *CIRCUS MACROPTERUS*, Vieill. (Arg. Orn. ii. p. 58.)

The female of this Harrier in breeding plumage differs greatly from the male in having the entire under surface of a deep ferruginous colour. I will procure a specimen and forward it. The nests are placed not far from one another in rush-beds, and are composed of large platforms of dry bulrushes raised above the shallow water and well concealed by the growing rushes above them. The eggs are from three to five in number, of a dull white, coarse background, with an irregular ring of blood-red at the broad end. Some have only a faint blotch, and others are nearly pure white with a few ingrained spots of dirty grey.

11. *BUTEO SWAINSONI*, Bp. (Arg. Orn. ii. p. 59, pl. xvi.)

Fairly common. All through this winter there has been a number of immature birds of this species living about the estancia.

12. *GERANOÆTUS MELANOLEUCUS* (Vieill.). (Arg. Orn. ii. p. 64.)

Uncommon. A few of these Eagles have been here this winter, but they do not remain long in one place.

13. *PHALACROCORAX*, sp. inc.

A male obtained Sept. 15th, 1896. Legs black; iris black; bill dark brown above, tip horn-colour, beneath pale horn-colour; skin between the mandibles yellow.

Since I commenced to write these notes I have procured a Cormorant, similar to those observed at Espartilla (*cf.* *Ibis*,

1892, p. 204), which I think is undescribed. Its length is less than that of *Ph. brasiliensis*, but its tail is longer. It is occasionally seen here in spring and summer, when it associates with the Gulls in their breeding-place. The present specimen was captured by a friend, who kept it alive for three days; hence its cut wing.

[If this belongs to a species distinct from *P. brasiliensis* (which I agree with Mr. Holland seems likely), it is probably *P. gracilis* (Meyen), described and figured as *Halieus gracilis* in his Beitr. z. Zool. p. 237, tab. xxxii., from specimens obtained in Chili. But I cannot decide the question without additional examples.—P. L. S.]

14. *DENDROCYGNA FULVA* (Gm.). (Arg. Orn. ii. p. 126.)

A male, March 22nd, 1896. Legs slate-blue; iris black; bill slate-blue, tip black.

A winter and summer visitor in flocks, but not common.

15. *GELOCHELIDON ANGLICA* (Mont.); Saunders, B. M. C. xxv. p. 25.

Sterna anglica, Holland, Ibis, 1890, p. 428; 1892, p. 212.

[Mr. Holland sends home a fine adult male of this Tern, obtained at Sta. Elena, Oct. 12th, 1895. "Legs black; iris brown; bill black." He notes it as "fairly common," so that there can be now no doubt whatever that it should be added to the Argentine list.—P. L. S.]

XV.—On a Further Collection of Birds, made by Messrs. La Touche and Rickett, from N.W. Fohkien. By HENRY H. SLATER.

(Plate IV.)

I AM again indebted to my two indefatigable friends in the far East for the privilege of examining an interesting collection of birds, selected from a much larger number, obtained at Kuatun (*cf.* 'Ibis,' 1896, pp. 489–490) in May and June 1896. I am pleased to find among them some confirmation of an expectation formed a good many years since—namely, that many of the Himalayan birds, hitherto

known only from the Indian side, would on further investigation be found, either in identical form or as closely-allied representative species, in China. It will be noticed that many of the birds here mentioned are of genera well known in the Indian hill-country. Now, if N.W. Fohkien were anywhere near the Indian boundary the circumstance would be of interest; far more so when, in the present case, these birds come from a region much nearer to the Pacific coast.

Before mentioning the birds themselves, I should like to express my thanks to Mr. W. R. Ogilvie Grant, who has given me valuable assistance at the British Museum, and who, I may add, has concurred generally in the views which I express.

1. *PHYLLOSCOPUS REGULOIDES*, Blyth.

Two examples, in brilliant summer plumage, shot at Kuatun, on May 6th and June 3rd, 1896, respectively. It is therefore probable that this species breeds in N.W. Fohkien, as well as being a winter visitant (*cf.* 'Ibis,' 1896, pp. 490-492).

2. *PHYLLOSCOPUS AFFINIS* (Tickell).

I have taken particular care in the identification of this species, since Mr. Styan ('Ibis,' 1891, p. 339) puts down as young examples of *Luscinola schwarzi* (Radde) two birds previously ('Ibis,' 1889, p. 444) described by him as belonging to the present species. However, the one which I have before me is, beyond question, an example of *Phylloscopus affinis* (Tickell), in rather faded breeding-plumage, shot at Kuatun on June 5th, 1896. It is the first occurrence of this bird in Central China, though previously recorded in Kansu (David and Oustalet, 'Oiseaux de la Chine'). *Phylloscopus affinis* is a much smaller bird than *Luscinola schwarzi*, with feeble Phylloscopine legs and feet, of a general greenish yellow at all seasons. *L. schwarzi*, besides being larger generally, has pale legs and feet of a stouter build than any *Phylloscopus*, and is noticeably longer in the tarsus than the present species. Its underparts alone seem to put on the greenish tinge mentioned by Mr. Styan in the first autumn;

but this at its brightest is nothing like the vivid green-yellow which *P. affinis* wears all the year round.

† 3. *CETTIA RUSSULA*, n. sp.

This bird, of which I have been favoured with three examples to examine, belongs to that section of the genus *Cettia* in which the crown of the head is uniform in tint with the rest of the upper parts. In many respects it is like *C. pallidipes*, Blanford, of Assam, but differs from it in having no trace of olivaceous in the colour of the upper parts. No white *post*-orbital eyebrow. Moreover, the ear-coverts are of exactly the same shade as the rest of the head, whereas in *C. pallidipes* they are deep umber-brown, and match the equally dark lores in front of the eye.

Description.—General colour of upper parts dull russet-brown; lores and ear-coverts of precisely the same shade; eye-stripe buffish white, indistinct, and not extending behind the eye; wings and tail rather darker brown, edged with the same shade as the back; underparts brown-buff, becoming white on the throat, centre of breast and of belly; axillaries pale buff, under tail-coverts darker buff. Bastard primary half the length of the second, which is about equal to the 10th; 3rd, 4th, and 5th the longest (the 4th having the advantage by a mere shade); from the 5th the others decrease evenly to the secondaries: tail, 0·2 to 0·3 in., considerably longer than the wing; central feathers fully 0·6 in. longer than the external pair: bill brown, lower mandible paler; legs and feet very pale brown, possibly yellowish when fresh. Length of wing 1·9 to 2 inches, tail 2·1 to 2·4, culmen 0·4, tarsus 0·73.

There are two birds in the British Museum Collection (placed among *C. pallidipes*) which Colonel Godwin-Austen's collector obtained at Miri, on the Assam frontier. They may possibly be of this species, which they resemble rather than *C. pallidipes*, but their poor condition makes it difficult to pronounce definitely.

The three specimens of *Cettia russula* that I have examined were shot at Kuatun on 18th May, 27th May, and 6th June, 1896, respectively.

4. *SUTHORA DAVIDIANA*, n. sp. (Pl. IV. fig. 1.)

The gem of the collection. The smaller *Suthoras* are divided into two groups by the Key in the B. M. Cat., vii. p. 486. The *S. humii* group have black throats and parti-coloured plumage, the head and back being of much the same tint. The *S. conspicillata* group have plain throats and are modest-coloured; the head different in colour from the back. The present species falls into neither section; it resembles the *S. humii* party in possessing a black throat, and the *S. conspicillata* group in having a red head and plain dusky back and wings. I regret to point out that this discovery spoils the Key.

Description.—Head rich chestnut, extending over the nape and sides of the head; back grey, with a faint brown tint on the tips of the feathers; wings, including the coverts, earthy brown, the primaries with sandy outer margins; upper tail-coverts sandy; tail dusky brown, with broad dull rufous external margins to the remiges; throat black, with minute white tips to the feathers where they meet the grey-white chest; rest of underparts sandy grey, more ruddy on the flanks, thighs, and under tail-coverts. Length 3·9 inches, culmen 0·3, wing 2 to 2·05, tail 1·6, tarsus ·66.

It will be seen that this species is proportionately shorter in the tail than any other of the family. It is quite distinct from *S. humii*, *S. poliotis*, and *S. nipalensis*, in having no black, white, or grey on the sides or top of the head. *S. verreauxi* (*S. gularis* of Verreaux) I have not seen, but, judging from Verreaux's figure (Nouv. Arch. viii. pl. vi., 1872), the latter has a white eyebrow, the crown of the same colour as the back, and bright chestnut wings, which will not do for the present bird at all. The description of *S. alphonsiana*, Verr., gives no black throat, and the sides of the head rosy grey, as in *S. bulomachus*.

5. *SUTHORA BULOMACHUS*, Swinh.

One specimen. I am led to make a further remark on the genus *Suthora*. Messrs. Seebohm and Styan reviewed this genus, so far as it related to Chinese species, in 'The Ibis,' 1894,



J. G. Keulemans del. et lith

1. SUTHORA DAVIDIANA. 2. CRYPTOLOPHA RICKETTI

Mintern Bros. imp.

p. 338, and came to the conclusion that *S. suffusa* must be considered a synonym of *S. bulomachus*. When lately examining the large series at the British Museum, I was surprised that they had not gone a step further, and joined *S. bulomachus* to *S. webbiana*. The distinctions have always seemed to me to be singularly unsatisfactory, and are briefly the following:—*S. webbiana*, is supposed to be ashy brown on the back, while *S. bulomachus* is pale olivaceous brown and has a shorter tail—*S. webbiana* being the Northern, as *S. bulomachus* is the South China form. Every supposed characteristic of the northern form can be found in southern birds, and *vice versâ*: the length of tail is by no means constant in either; the supposed differences in massiveness of bill are infinitesimal, and seem to me to be marks of age; and, to crown all, while *S. suffusa* is described in the B. M. Catalogue as “very similar to *webbiana*,” Messrs. Seebohm and Styan make it synonymous with *S. bulomachus*! Mr. Ogilvie Grant agrees with me in the view that *S. webbiana* ought to be the sole surviving name for a species which ranges from Mongolia to Formosa, of which *S. bulomachus*, Swinh., *S. suffusa*, Swinh., *S. longicauda*, Campb., and no doubt *S. fulvicauda*, Campb., also, are merely synonyms.

† 6. YUHINA NIGRIMENTUM, Hodgs.

Hitherto only recorded from China, I believe, by MM. David and Oustalet, the former of whom found it very rare in the mountainous parts of the extreme S.W. It is one of the birds, however, which I have long been expecting to hear of from other parts of China; I have now a male from Kuatun (17.5.96) from Messrs. La Touche and Rickett. I think it inadvisable to separate this from the Himalayan species, although both above and below it is decidedly greyer, differing exactly as *Parus ater*, across the Channel, does from the English Coal-Tit. Instead of being olive-brown above, it is decidedly ashy, except on the wings and tail; and there is much less fulvous on the underparts—only a tint of it, indeed.

7. *ANORTHURA*, sp. incert.

This bird, which no doubt would have been of the highest interest, reached me without a head. As far as can be judged from the remains, the bird is intermediate between *A. fumigata* of Japan and *A. formosa* of India.

8. *PNOEPYGA PUSILLA*, Hodgs.

One old bird (Kuatun, 20.5.96) and a dusky young one. A new record for China.

9. *CRYPTOLOPHA CASTANEICEPS*, Hodgs.

It is somewhat singular that this Nipalese bird should be found in N.W. Fohkien; but not only have Messrs. La Touche and Rickett sent me for identification two females from Kuatun, but they inform me that one of them was shot off four eggs. The only difference that I can detect between these and Nipalese examples is the absence of any white in the "centre of the body," which is in both the Fohkien females of a uniform canary-yellow; the culmen measures a trifle less in the latter (0.32, to 0.4 in Indians); they are otherwise normal.

+10. *CRYPTOLOPHA RICKETTI*, n. sp. (Pl. IV. fig. 2.)

This interesting bird, of which I have received a male and female (shot at Kuatun on the 20th and 30th of May, 1896), is most closely allied to *C. burkii*, Burton, of India, and *C. trivirgata* (Temm.) of Java, and, with these two species, differs definitely from all the rest of the species of *Cryptolopha* in having the underparts of a uniform yellow from bill to tail. It differs from both, however, in that its underparts are of the clearest canary-yellow; beside it both the others look green. It has no trace of the yellow rump of *C. burkii*, the upper parts from nape to tail being of a uniform grey-green. In *C. burkii* the whole of the inner web of the tail-feathers is white; in *C. trivirgata* there is a white margin to the inner web, not reaching the end of the feathers; in *C. ricketti* there is a narrow yellow line on the edge of the inner web from base to apex. The differences are difficult to define in words, but the three species look quite different to the eye, and *C. ricketti* is noticeably shorter-billed.

Head with a yellowish-green line from beak to nape down the centre of the crown; on either side of it a broad black line, bordered by a bright yellow eyebrow; through the eye another black stripe; rest of upper parts grey-green, the feathers of the darker wings and tail margined externally with the same grey-green; throat and underparts, including the under wing-coverts and axillaries, bright canary-yellow; outer tail-feathers with a narrow yellow inner margin, reaching to the tips of the feathers; upper mandible very dark brown, the lower whitish horn-colour; legs and feet, including claws, very pale yellow-brown.

Length 4.2 inches, culmen 0.33, wing 2 to 2.1, tail 1.6, tarsus 0.64.

I have named this species after Mr. C. B. Rickett, who is doing so much at present for Central Chinese ornithology.

†11. *SIPHIA BRUNNEATA*, n. sp.

This is the Chinese form of *S. olivacea*, Hume, with which (from the description in B. M. Cat. iv. p. 458) I at first believed it to be identical. But on comparison with the Museum series it seems quite divergent enough for separation. I have before me two examples, a male shot at Kuatun on May 26, 1896, and another, shot next day, of which the sex is not marked. Instead of dull olivaceous above, as in *S. olivacea*, the colour of the upper parts is a dusky russet-brown, without the least tinge of green; the sides of the head are of the same uniform russet—not ashy grey, as in *S. olivacea*; and the underparts, excepting the centre of the throat and belly, which are white, are of a lighter shade of the dusky russet found on the back. Moreover the Chinese birds have a whitish base to the under mandible, which none of the Indian specimens in the British Museum have.

Measurements :—

		Culmen.	Wing.	Tail.	Tarsus.
		in.	in.	in.	in.
<i>S. brunneata</i>	♂	0.5	3.2	2.3	0.65
„	♀	0.53	3.25	2.6	0.7
<i>S. olivacea</i>	♂ (India)	0.5	2.9	2.5	0.7
„	♂ (do.)		2.95		
„	♂ (do.)		2.85		

From this it will appear that *C. brunneata* is of the same size generally as *S. olivacea*, but has a decidedly longer wing. I might add that the description of *S. albo-olivacea*, Hume, given in a footnote to the B. M. Cat. (iv. p. 457), does not fit the present bird at all.

12. *GEVINULUS VIRIDANUS*, n. sp.

Bears a general resemblance to *G. grantia*, McClell., of India. It will be enough, perhaps, to point out the differences between the two. *G. viridanus* is a dull green *G. grantia*; the red on the back is less vivid and is much mixed up with green; the yellow on the throat, sides of face, and back of neck in *G. grantia* becomes in *G. viridanus* dull dingy green, the hinder crown alone being yellowish. The rosy feathers of the fore-crown are much less vivid in *G. viridanus*. But the chief distinction lies in the much more boldly marked wings and tail of the latter, which are black, distinctly barred with buff, and a wash of rich deep red on the top of all. The foregoing rather suggests a description of the young bird of *G. grantia*, but the colouring is really very dissimilar, and in the example sent me by Messrs. La Touche and Rickett the rosy feathers of the head are confined to the forehead, showing the bird to be an adult male. Lastly, the Chinese bird has a longer wing by more than .3 inch (5.35 to 5.0 in *G. grantia*), though in other respects much of the same size.

It was killed at Kuatun in the winter of 1895-96, and Messrs. La Touche and Rickett's collector obtained it, and the following, from a native.

13. *DENDROCOPUS INSULARIS*, Gould.

An adult male, shot with the foregoing at Kuatun in winter. Hitherto recorded only from Formosa, but a number of the birds originally described from that locality are being now discovered on the adjacent mainland.

XVI.—*Field-Notes on the Birds of Chili.* By AMBROSE A. LANE. *With an Introduction and Remarks by P. L. SCLATER* *.

[Continued from p. 51.]

51. *BUBO MAGELLANICUS* (Gm.).

Bubo magellanicus, Sharpe, B. M. C. ii. p. 29.

(Vilugo, N.W. of Sacaya.)

I was informed that this Owl occurs in the southern provinces, but I did not see any or get any authentic record of it during my residence there. It is found in the Andes in the northern provinces, and is known to the natives of all the places that I visited on the Bolivian frontier, who said it was an occasional visitor, but not unfrequent, and was called "Jucu," probably on account of its cry. The Jucu is said to hunt small animals by night, resting during the day on some cliff. It is said to nest on cliffs and to lay about four eggs. The iris is of a gamboge-yellow.

52. *GLAUCIDIUM NANUM* (King).

Glaucidium nanum, Sharpe, B. M. C. ii. p. 196.

(Rio Bueno.)

This is a widely-distributed species in Chili, occurring probably from Coquimbo down to the most southerly provinces on the mainland, and also on Chiloe. It is generally known as the "Chunchu," and appears everywhere to be a resident species.

The sexes are similar in appearance. The feet are ochre-yellow, claws black; the iris canary-yellow.

These Owls generally remain during the daytime in dense coppices and become very active after dark. They are more plentiful in the south, where it appeared to me they assumed a more ruddy tint in colour than those further north. They are more numerous about cultivated districts than in the forests; they feed on small birds and insects.

At Rio Bueno this Owl nested in December and January. I think the brood consists of about four. It is occasionally

* [The localities given after the names of the species in brackets are those of Mr. Lane's specimens, which are now in the British Museum.—P. L. S.]

found abroad in the daytime, and the light does not seem to affect it so much as it does the larger Owls.

The note is to be heard at all hours; it is a "*to-whit-to-whi*" rather softly uttered, and expressed by the Germans as "*wie geht's, wie geht's.*" I had a pair of them alive for some time; they were brought me when young but full-grown. They never got tame, and on being approached threw themselves into the furthest corner of the cage, puffing and snapping their bills, whilst their big eyes were glaring and distended to the fullest. If the hand was put forward they rolled on their backs and made fight with beaks and claws. I did not know at the time that they killed small birds, so when I got them at first I put them along with some other birds, but I soon found them out. The first thing I discovered was that a little *Thinocorus rumicivorus*, which I had kept under difficulties for a long time, had had its head eaten off in the night by these Chunchus; they also made onslaught on some young Thrushes. I then kept them about a month alone in a box and fed them on bits of meat, but one died; and as I thought the box was too severe confinement, I tied the other by the leg in a garden where I had some hawks. Here, although the little Chunchu proved able to defend itself from dogs, cats, and rats, it was accidentally crushed to death. However, it had never got much tamer, and was always ducking its large head from side to side and peering about, as if seeking a way of escape.

53. *SPEOTYTO CUNICULARIA* (Mol.).

Speotyto cunicularia, Sharpe, B. M. C. ii. p. 142; *Scl. P. Z. S.* 1891, p. 135.

(Hacienda Mansel.)

This is a widely distributed species; it occurs throughout Northern Chili wherever the locality is suitable, and is plentiful through the central provinces as far south as Arauco, below which I did not hear of it.

In the province of Tarapacá it occurs in oases and in the desert immediately surrounding them. In such localities it is known as the "*Cau-cauhuc*"; in Chili proper it is called the "*Piquen*."

These Owls are generally found outside their burrow in daytime, and when anyone approaches they invariably attract attention by their discordant screeching. They will be observed sitting on a rock or stump, and if approached fly a short distance to a similar post and continue their harsh screeches. Their burrow is of considerable length, and usually excavated in the slope of a hill or on a sandy bank.

I was told that they occurred up to 10,000 feet in the cordilleras of Tarapacá. In Arauco I only observed them on the open sandy stretches near Laraqueti, where they were undoubtedly resident. The iris is of bright gamboge-yellow.

54. *BUTEO ERYTHRONOTUS* (King).

Buteo erythronotus, Sharpe, B. M. C. i. p. 172; *Scl. P. Z. S.* 1891, p. 135.

(Cancosa and S.W. of Sacaya.)

I only met with specimens of this species in the cordilleras of Tarapacá, but I believe it has a considerable range and occurs in the highest altitudes.

At Sacaya it was known as the "Aguila," or Eagle. The dark specimen that I got (No. 258) was regarded by the natives as a distinct species; they called it the "Halcon." The lighter specimen was smaller, but appeared the same, except in colouring. The legs and feet of both these birds were of a buff-yellow, the claws black. These birds are essentially birds of prey, but are said to capture fishes at times in the small streams.

I was told that they nest very early in the season on some cliff, and lay two white eggs.

55. *ANTENOR UNICINCTUS* (Temm.).

Erythrocnema uncinata, Sharpe, B. M. C. i. p. 84.

(No specimen in B. M. from Mr. Lane.)

This species occurs on the low-lying stretches of swampy or sandy plain which occur in the vicinity of the coast of Central and Southern Chili, as well as in similar localities inland, and also on open stretches of country.

It is generally known as the "Penco." It occurs in places about Valdivia, and probably on Chiloe, and I heard that its

range extended for some distance further south. It frequently alights on the ground, though where trees occur by its haunts it will sit for a long time on some solitary branch or on the topmost bough.

56. *ACCIPITER CHILENSIS*, Ph. et Landb.

Accipiter chilensis, Sharpe, B. M. C. i. p. 155.

(Maquegua.)

I got the single female specimen of this Hawk sent home about ten miles north of the station of Maquegua, right in the forest, though it was near a small clearing. I think the men there called it a "Penco," but they did not appear to know much about it, saying that it was seldom seen.

It measured 17 inches long. The legs and feet were of dark olive-yellow, the claws brownish, black at the tips. Bill dark, black at the tip. These birds are said to be destructive to fowls.

+ 57. *FALCO FUSCO-CÆRULESCENS* (Vieill.).

Falco fusco-cærulescens, Sharpe, B. M. C. i. p. 400; *Scl. P. Z. S.* 1891, p. 135.

(Vilugo, two days south of Sacaya.)

I was told that these birds visit Sacaya frequently at certain times, and are known as the "Man-man." They occur at elevations up to 11,000 feet at any rate, and are said to be resident.

58. *TINNUNCULUS CINNAMOMINUS* (Sw.).

Cerchneis cinnamomina, Sharpe, B. M. C. i. p. 439.

(Arauco, Rio Bueno, and Llanquehui.)

This is by far the most numerous of the family in Chili. It is plentiful from Valparaiso to Chiloe, and probably extends much further south, and also further north. The general local name is "Cernicalo," by which it appears to be known everywhere.

These Kestrels are very plucky and kill a great many small birds. I thought at first they only lived on beetles and other insects, but I found one with a freshly-killed bird in its talons. They frequently mob the Traro (*Polyborus tharus*) and other large birds. They prefer open plains or partially open dis-

tricts, and often perch on telegraph-posts and railings. They do not seem to touch birds of the Starling-sort, as *Curæus aterrimus* and *Trupialis militaris*. I have never observed them hover, like their English congener, but otherwise they bear much resemblance to the latter, and their note is as frequently uttered, being of the same sort, but in a higher key.

I had several specimens alive during my stay in the south, and kept them easily by tying them to a stake with a cord. Adults would be hard to tame, but young birds become thoroughly so; they require to be tied where they can perch on a stake or pole, on the top of which they will sit all day. Those I had all escaped or were accidentally killed. The young have a softer quavering cry; this was constantly uttered by one that I kept whilst I was skinning specimens. When I approached with a piece of meat this bird would fly at it, seizing it adroitly in his claws and carrying it to his perch to eat.

† 59. *ELANUS LEUCURUS* (Vieill.).

Elanus leucurus, Sharpe, B. M. C. i. p. 339.

(Laraqueti.)

This handsome bird occurs, I am told, not unfrequently on moors and swamps near the coast of Central Chili. I found it at Laraqueti and Arauco, but am not sure how far south it extends, as I heard of a bird answering the description occurring about Valdivia.

A female procured at Laraqueti was in adult white plumage. The legs and feet were deep chrome, the claws black. Bill black; gape and nostrils orange-buff. Iris (large) poppy-red. This bird had three or four mice in its stomach, one of which was almost whole.

60. *MILVAGO CHIMANGO* (Vieill.).

Ibycter chimango, Sharpe, B. M. C. i. p. 41.

This is a common species all through Central and Southern Chili, especially about arable land, where it takes the place of the genus *Corvus* in other countries, and feeds similarly. It is rather more numerous in Chiloe than in any other

locality which I visited, and is known everywhere as the "Tingue" or "Trinque."

Its discordant cry is heard ever and anon when one rides about, and in the southern provinces in the winter-time, when the country looks most blank and dreary and the rain falls unceasingly, the cry of the Tingue will be heard as if complaining of the wretched situation, and is enough to make anyone feel dismal.

These birds feed on a variety of substances, more especially insects and reptiles. I have seen a flock hovering round a man ploughing, just the same as the Rook does here. They are very partial to carrion and offal, and are always present on the sea-beach and by rivers and lakes, where they feed on fish, shell-fish, &c.

I found a nest of this species in the south about the 1st of November, containing three very young birds, covered with white down. It was placed in a low tree in a coppice, about 9 or 10 feet above the ground, and well concealed. It was a little over 1 foot in diameter, and roughly made, though compact in the centre. The outside was a mixture of twigs, sticks, and straw, which formed the bulk; in this was a layer of dry grass or fibre, made fairly compact, and a warm lining of wool completed the structure. I have seen a Tingue alight on the back of an ox, which by sundry hitches and twitchings made it fly off. Then it went on another of the herd, which likewise was evidently too much tickled by its strong talons, and got rid of it by a whisk of the tail; but the persevering bird finally succeeded in staying on one lying down, which appeared too fat and lazy to trouble about it, and remained a long time, running up and down and searching busily for insects on the hide.

61. MILVAGO MEGALOPTERUS.

Ibycter megalopterus, Sharpe, B. M. C. i. p. 36; Scl. P. Z. S. 1891, p. 135.

(Sacaya and Cancosa.)

I met with these birds in the cordilleras of Tarapacá, when I invariably observed them in pairs. They were not

uncommon and generally appeared on the wing, circling round not far above the surface of the ground, which they quartered carefully as they passed along, lingering about any spot where they hoped to discover some object in the way of food.

They are called "Caracanco" by the Indians, and are found at all altitudes above 6000 feet. The nest consists of llama wool, twigs, &c., and is roughly made on the ledge of a cliff.

62. *POLYBORUS THARUS* (Mol.).

Polyborus tharus, Sharpe, B. M. C. i. p. 31.

(Rio Bueno.)

This bird occurs in limited numbers in the Central Provinces, increasing southwards and becoming plentiful about Valdivia and on the Laguna. It was known everywhere as the "Traro."

Like the *Milvagoes* they are harmless birds, and of no inconsiderable use in demolishing carrion. Their size and appearance would suggest a bird of great strength and ferocity, destructive to all their lesser fellows; but, on the contrary, they are quite inoffensive, so far as I could ascertain.

The female is somewhat larger than the male, but I fancy attains the same amount of colour.

They nest in the forests on high trees, and at other seasons are frequently seen in flocks of from six to a dozen. They feed on carrion, insects, and reptiles. They also seek for worms on the arable land.

Their note is a harsh grunting or croaking noise, louder and more grating than that of the Raven, the place of which they appear to occupy in this portion of the globe. It is not often heard, except during the breeding-season. I have frequently seen them mobbed by the small Kestrel. On one occasion I shot one of the latter which I noticed attacking something in a tree, screaming and continually swooping at it. This proved to be a large Traro, which was concealed in the evergreen foliage.

+ 63. *CATHARTES AURA* (Linn.).*Enops aura*, Sharpe, B. M. C. i. p. 25.

(Corral.)

This bird is numerous on the coast in North and Central Chili, and is distributed generally inland and throughout the greater part of the continent. I observed it in the south as far as I went, but from Valparaiso south it decreases, and *C. atratus* becomes more plentiful. In Tarapacá I observed it up to 5000 feet, but did not hear of its occurrence in higher regions.

It is properly called the "Joté," but is constantly looked upon as the same species as *C. atratus*, and called "Gallinazo," especially where both intermingle.

When these birds cannot find carrion they seek for refuse on the sea-beach, disputing fish-remains with Gulls and other sea-birds. They appear to be entirely mute, but possess remarkable faculties of sight and smell.

+ 64. *CATHARTES ATRATUS* (Bartr.).*Catharistes atratus*, Sharpe, B. M. C. i. p. 24.

(Laraqueti.)

This species is similar to the foregoing in all respects, and resembles it in appearance; but is more numerous in south temperate Chili. It is called the "Gallinazo," from *gallina*=a hen, to which, when on the ground, they have some resemblance, at least to a distant observer. It nests in the forests of the southern provinces, where it is more arboreal in habits than on the coast.

In Ancud (Chiloe) these birds may be seen sitting in rows on the house-tops all through the town. The further south I went the more numerous they became on the coast. Both species are very harmless and useful, especially *C. aura* in the northern districts, where their presence as scavengers is indispensable. In the south it is not so necessary, and they are always assisted by *Polyborus tharus* and *Milvago chimango*.

65. *SARCORHAMPHUS GRYPHUS* (Linn.).*Sarcorhamphus gryphus*, Sharpe, B. M. C. i. p. 20.

I saw Condors in Tarapacá, but never got close to them.

They are not plentiful, and are said to be gradually decreasing. All the old residents stated that they once existed in enormous quantities, the reason of their decrease being said to be that the railways have reduced the number of beasts of burden, on the carcasses of which they fed.

They are extremely wary, and I was unable to get one in the cordilleras, although I made an Indian watch for them a long time by a dead donkey, which is supposed to be a special attraction.

66. *PELECANUS MOLINÆ*, Gray.

(Coronel.)

This Pelican occurs plentifully about the coast of Northern and Central Chili, and is generally called "Alcatr s" by the natives. I obtained a specimen of the adult male at Coronel during the winter season. I saw five of these birds flying across the harbour of Corral (Valdivia) in October 1890. However, I was told they only occur there sparingly in summer time. I believe they are frequently captured in a calm by fishermen, not being capable of rising in smooth water.

+ 67. *SULA VARIEGATA* (Tsch.).

This is a numerous species on the west coast of South America, especially about Northern Chili.

I have only observed them out at sea, or flying parallel to the beach well out of gun-shot. They may be readily distinguished when feeding, which they do like their congeners, dropping vertically into the water, sometimes from a height of from twenty to thirty feet.

On 28th Dec., 1889, while on board the s.s. 'Puno' going to Iquique, I saw large quantities of these birds outside Coquimbo. There was evidently a shoal of fish beneath, for they kept dropping into the water so fast and in such numbers that the effect was remarkable, and can only be described as resembling a shower of large hailstones.

I did not notice them south of Arauco, but I believe they occur at Valdivia in summer time, and perhaps further south. I did not hear of a Chilean breeding-place, but was

told that these birds form most of the guano-deposits on the Peruvian coast.

† 68. PHALACROCORAX BRASILIANUS (Gm.).

(Laraqueti.)

These birds may be considered the most numerous amongst the sea-fowl of the Chilian coast, becoming more plentiful as one goes south. They penetrate up the rivers, so as to be often found almost at the base of the Andes and on comparatively small streams.

They are generally called "cuervo" (crow), but in some inland localities are perhaps better known as "pato negro" (black duck). They vary considerably in size, the males being larger; a female which I measured was only 20 inches long, and the other measurements were smaller in proportion. The iris is a lustrous myrtle-green.

These birds have a strong disagreeable odour. They are perhaps partially migratory, but I should not consider them gregarious, although at Corral I have seen about two hundred together in the harbour, which when disturbed flew away in a continuous line, like Petrels.

When on the rivers they usually occur singly, flying up and allowing themselves to drift down stream whilst fishing. They feed by diving like Grebes, and often remain three or four minutes under water. They sit for long intervals on rocks or snags in mid-stream or even in low trees by the banks of the smaller rivers. By the sea-shore they sit on the rocks, often in groups of from three to thirty. Sometimes on being approached they utter their deep note, which is a bass grunt, and often (if seated) hold out the wings as if preparatory to flight.

They usually swim with only the head and neck above water, but can also swim with the body above the surface; if approached they fly off with apparent facility, and are always rather wary. I was told on good authority that about spring or summer time at Maquegua (province of Arauco) large flocks fly up the river about sunset, and roost in a part of the forest about ten miles inland, where the trees and

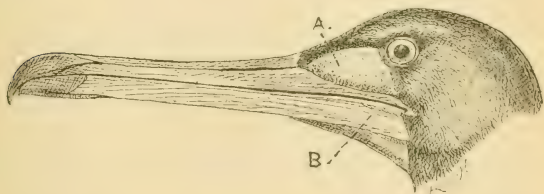
ground are covered with their excrements. The flight is steady, and sometimes they keep at a considerable height, though as a rule they fly low along the water.

69. PHALACROCORAX GAIMARDI (Garnot).

(Corral.)

I found this Cormorant plentiful off Corral (Valdivia but not nearly so numerous as *P. brasiliensis*. They did not appear to come into the harbours or up the rivers, but kept outside a few miles off the land.

I noticed that they swim with the body up, like Ducks. The local name is "Lile," or "Pajaro Lile," but this is also generally applied to all the other species of Cormorant that occur there except *P. brasiliensis*.



The legs, feet, and web of *P. gaimardi* are of a light coral-red, and the claws are black. The bill is a cadmium-yellow, greenish brown along the top, and at the base of the upper mandible (A) of a bright orange-vermilion, blending into the yellow (see woodcut). The base of the lower mandible (B) is similar in colour, but not so bright. These birds have the disagreeable odour of other Cormorants, but in a lesser degree.

A handsome white-breasted Cormorant* occurs on the Valdivian coast during winter time, as well as some other species, but they all retire south in the summer time to breed.

* [Probably *P. imperialis*. See 'Challenger' Reports, Birds, p. 120.—P. L. S.]

70. *ARDEA COCOI*, Linn.

This species is reported as a regular winter visitant to Valdivia, the Rio Bueno, Pilmaiguen, &c., and the Laguna Llanquehui. I believe the natives call it the "Pillo," which name is properly applied to the Maguári Stork. The Germans call it "Silber-reiher" (=Silver Heron).

+ 71. *ARDEA EGRETTE* (Gm.).

Ardea egretta, Sclater, P. Z. S. 1891, p. 135.

(Sacaya.)

This species ranges all through Chili, occurring even at Sacaya. It is most numerous in the central provinces, and not so common in the south.

The note is harsh, but not often heard. These birds are very wary. I have seen them on streams close to the sea-beach, but never actually on salt-water. Like *A. candidissima*, they are often seen in flocks where plentiful.

+ 72. *ARDEA CANDIDISSIMA* (Gm.).

Ardea candidissima, Sclater, P. Z. S. 1891, p. 135.

(Sacaya.)

This Egret is numerous on rivers or swamps in Central Chili, where it is known as the "Garzetta"; I did not see any in Arauco, though a few may come there in summer, and further south I did not hear of it. I got one at Sacaya, as well as a specimen of *A. egretta*. I was told that they had never come there previously; at all events they appeared to be chance migrants.

73. *NYCTICORAX OBSCURUS*, Bp.

Nycticorax obscurus, Sclater, P. Z. S. 1891, p. 136.

(Sacaya.)

The Night-Heron is common all through Central and Southern Chili, the most general local name being "Huara," and in some places called "Huarabo."

I have forwarded an egg, which I was informed belonged to this species; I got it from a man who was a thorough naturalist and not likely to make mistakes. The birds are usually met alone, and, as a rule, by a river or stream. They sit during the daytime in some thick bush or tree by

the water, and at dusk repair to some favourite feeding-ground. Their note, when on the wing, is the usual loud *quawk* peculiar to Night-Herons.

The bird that I brought home for the Zoological Society's Gardens* was obtained for me by a friend at Coronel, just before I was leaving, otherwise I fear I should hardly have managed to keep it alive, as out of the number of birds I had, off and on, very few survived, and of these only the Night-Heron and one Chimango lived through the journey. The former was a young bird; I do not know its sex.

These birds also make a cackling noise, very loud and harsh, if disturbed; but this is not often to be heard from the wild birds, unless closely approached, which their watchful timidity seldom permits.

74. PHENICOPTERUS ANDINUS, Phil.

Phenicopterus andinus, Sclater, P. Z. S. 1891, p. 136.

Phenicoparrus andinus, Salvad. B. M. C. xxvii. p. 21.

(Cancosa.)

These birds appear to be resident at Huaseo and Cancosa, where they are known by Bolivians as "Parina." They always inhabit the salt lagunes, so far as I could ascertain. They are very wary, and from the openness of their resorts are most easily obtained with a rifle, a well-placed bullet sent into a flock sometimes bringing down three or four. When disturbed they take wing, uttering trumpet-like notes, and after making a wide circuit at a considerable height alight about two or three miles off.

Their average length is about 40 inches; bill (point to rictus) 3·75; tail 9, apparently consisting of two middle rectrices and six lateral each side. The wing measures 17 inches, the expanse about 64; the tibia 10; the tarsus 8·5; middle toe, with short blunt nail or claw, 2·5; hind toe absent. The fore part of the bill is black, the base a straw-yellow, verging into flesh-colour on the top, the lower portion

* [This bird was received by the Zoological Society and presented by Mr. James on May 21st, 1891. It was entered as *N. violaceus*, but I have no doubt this was an error. It was in immature plumage.—P. L. S.]

being wine-purple. Legs and feet pale yellow. The young birds, I was told, are white, or nearly so.

75. *CHLOEPHAGA MELANOPTERA* (Eyton).

Bernicla melanoptera, James, New Cat. p. 9; Sclater, P. Z. S. 1891, p. 136.

Chloephaga melanoptera, Salvad. B. M. C. xxvii. p. 129.

(Cueva Nigra, Lake Huasco, and Sacaya.)

I only met these birds in the cordilleras of Tarapacá, where they breed and appear to be resident. The Bolivians call them the "Huaillata" (pronounced Wy-l-ya-ta). They are said to occur at certain times all through Chili, where they are known as the "Piuquen." They perhaps reside in small numbers in certain localities, but are most likely, on the whole, a migratory species.

I was told that when shot in lowland localities the flesh is strong, but I thought those I ate in the cordilleras exceedingly palatable; however, a keen appetite and uncertain supply gives great flavour to such dishes.

I found a nest of this Goose at Cancosa on Jan. 29th, 1890. It was placed in a hole in a low sandy cliff, and I had to get the men with me to lower me from the top with a lasso, which I secured to my body. It was a rather tedious operation, as I had to remain hanging in a most unenviable position for about three-quarters of an hour, and the high wind blew the sand unceasingly into my eyes. I could see the old female Goose sitting on the nest, which she stubbornly refused to leave; but she was just beyond my reach where I hung.

I then got a man to go below, and placed myself in communication with him by means of a cord. He provided me with the ramrod of a muzzle-loader, and with that, after a while, I got a slip-knot round the Goose, and going on one side, let the man haul her out from below, so that she was pulled fluttering to the ground. I now found that the eggs were in a slight hollow, so that, although I tied some bits of stick crosswise on the end of the ramrod, so as to make a most efficient rake, I had some difficulty in extracting them.

The bottom of the hollow forming the nest was profusely filled with feathers. This structure I could not remove entire, so I had to rake it out by handfuls and let the man below get as much as he could in his "poncho" before the wind took it off. I got all the eggs out one by one and lowered each in a handkerchief to the Indian, and when I had scraped all the feathers out as well, I was glad enough to come down and get my breath.

These nests are sometimes, I was told, placed some miles from water and at a considerable height from the ground, so it would be interesting to know how the young birds a few days old get to the ponds on which they are subsequently found. The nesting-season seems to extend through January and February. As soon as the young can be got to a pond or laguna, they are watched most vigilantly by the two old birds, and when an intruder approaches the male goes off, sometimes pretending to be wounded, overland, whilst the female takes to the water, closely followed by her progeny. They feed chiefly on grasses or vegetable matter in the marshes. Their note when approached is a deep harsh cackling; they are not noisy, like the Common Goose, though they utter sounds when in company. An Indian told me that they lay, as a rule, about 12 eggs; but I did not see more than five young in a clutch, and the clutch I took appeared to be complete though fresh.

76. CYGNUS NIGRICOLLIS (Gm.).

Cygnus melanocoryphus, Salvad. B. M. C. xxvii. p. 39.

(Rio Pilmaiguen.)

This Swan occurs all through Central and Southern Chili, and is generally known as the "Cisne." I was told they breed in Patagonia or the far south. They are more or less migratory.

I heard of a White Swan occurring near Rio Bueno now and then. This was most likely the Coscoroba (*Coscoroba candida*); but I did not meet with it whilst there, and conclude that it is an irregular visitant in limited numbers.

77. *HETERONETTA MELANOCEPHALA* (Vieill.).*Heteronetta atricapilla*, Salvad. B. M. C. xxvii. p. 325.

(Rio Pilmaiguen.)

I got one example only of this Duck on the Rio Pilmaiguen, Feb. 19th, 1890. I had not observed any like it before, so it may be one of the numerous visitors which I was told come to this locality in the cold season.

78. *ANAS SPECULARIS*.*Anas specularis*, Salvad. B. M. C. xxvii. p. 215.

(Rio Pilmaiguen.)

I first came on these birds at Rio Bueno, and do not know how far they extend elsewhere, but they appear to be well known.

The correct Spanish name of this Duck is "Pato anti-ojillo" (= Spectacle-Duck), but the natives about Rio Bueno called it "Pato real," probably knowing nothing of spectacles, and therefore not seeing the appropriate application of the term to the peculiar face-markings of this species.

A fine adult male measured 2 feet long; bill 2.25 inches to rictus, 1.9 to base of culmen. The legs and feet were orange, the claws black at the tips; the web between the toes blackish. Iris black. Bill slate, almost plumbeous.

I always found this Duck near the banks of the rivers where shaded by the forest, and never on fields or open marshes. It may be found on streams in the dense forest where no other species occur.

79. *ANAS CRISTATA*.*Anas cristata*, Salvad. B. M. C. xxvii. p. 216.

(Sacaya, Sitani, and Lake Huasco.)

I found this species only in the Andes of Tarapacá, where it was common enough, and was perhaps partially resident. It nested at Huasco and Sacaya from January to March, in sedge or rushes, preferring little islands in the midst of ponds. As well as I could ascertain, the clutch is usually five or six.

The iris Chinese-orange. The flesh of this Duck is very good eating.

† 80. QUERQUEDULA CYANOPTERA.

Querquedula cyanoptera, Salvad. B. M. C. xxvii. p. 303 ;
P. Z. S. 1891, p. 136.

(Sacaya and Sitani.)

This handsome species was not so numerous in the Andean portion of Tarapacá as the other Ducks which I obtained there, and was also more local. I found it subsequently in the southern provinces, and was told that at certain seasons it is numerous in Chiloe. On the whole, it would appear to be a migratory species. It is generally known as the "Pato colorado" (or Coloured Duck).

It nested at Sacaya about January in sedge or rushes.

† 81. QUERQUEDULA VERSICOLOR.

Querquedula versicolor, Salvad. B. M. C. xxvii. p. 291.

(Rio Bueno.)

I got one specimen only of this handsome little Duck on the 4th January, 1890, close to the junction of the R. Pilmaiguen with the R. Bueno. It appeared to be an adult male.

82. QUERQUEDULA OXYPTERA (Meyen).

Nettion oxypterum, Salvad. B. M. C. xxvii. p. 262 ; Sel.
P. Z. S. 1891, p. 136.

(Sacaya.)

At first I confused this species with the Chilian Pintail, which it resembles most closely, except for its mottled head and smaller size; moreover the first specimens I got were full-grown flappers, which gave me the idea that they were the young of the common species, and it was not until I shot a full-winged specimen that I found out the truth, and this was also admitted by an Indian, who called it "Paspa chica." They were not so common as the Pintail, and I did not meet with it in the south.

83. QUERQUEDULA PUNA (Tsch.).

Querquedula puna, Salvad. B. M. C. xxvii. p. 293 ; Sel.
P. Z. S. 1891, p. 136.

(Sacaya.)

I found this species only about Sacaya and Cancosa,

where it bred during January and February in the marshes. The length of an adult male is 18.5 inches, bill 2 to rictus, tail 4. The iris is black; the legs and feet bright slate-grey; the claws black.

The female is perhaps slightly smaller. The bill is mostly glaucous blue, with a line of black down the top of the culmen, the tip also being black.

The local name of this Duck is "Cherito."

84. *DAFILA SPINICAUDA* (Vieill.).

Dafila spinicauda, Salvad. B. M. C. xxvii. p. 279; Sci. P. Z. S. 1891, p. 136.

(Rio Pilmaiguen, Corral, and Rio Bueno.)

This is the commonest representative of the Anatidae in Chili, and probably occurs in every province. In the south it is called "Pato comun," or "jergon" (the common or ugly duck); and in the highlands of Tarapacá the Bolivians call it "Pasma." It occurred here up to 12,000 feet.

The male is larger than the female, an adult measuring 22 inches long, tail 5.5, wing 10. The feet are of a dark greyish drab. The end of the bill is black, and this colour continues in a well-defined line along the upper surface to the base of the culmen; the sides are a bright maize-yellow.

These Ducks are mostly migratory, but appeared as if resident to a certain extent at Sacaya, where they breed from October to February. The nest is placed amongst sedge or bushes and contains from four to six eggs.

85. *MARECA SIBILATRIX*.

Mareca sibilatrix, Salvad. B. M. C. xxvii. p. 236.

(Rio Pilmaiguen.)

This species I did not hear of north of Valdivia. It is plentiful about the Chiloe Archipelago and adjacent mainland; it is known as the "Pato real," which name is also applied to *Anas specularis*. I did not meet any about Rio Bueno until about February, and then observed them in flocks by the Rio Pilmaiguen as if they had come from some breeding-haunt. Their note is a Wigeon-like whistle.

86. SPATULA PLATALEA (Vieill.).

Spatula platalea, Salvad. B. M. C. xxvii. p. 316.

(Rio Pilmaiguen and Rio Bueno.)

This species is numerous in the southern provinces, and generally known as the "Pato cuchara" (=Spoon-Duck). I found them by the Rio Pilmaiguen from December to March, where they probably breed. I do not know how far north they extend.

The legs and toes are ochraceous buff colour, the web between the toes being a clay-colour. Claws black. The bill in most fully developed specimens is a rich black; in some (perhaps younger) birds it has a mottled appearance. The iris is dark brown. The female is not quite so large as the male.

87. TACHYERES CINEREUS (Gm.).

Tachyeres cinereus, Salvad. B. M. C. xxvii. p. 373.

(Corral.)

I found some of these Ducks in the bay of Corral about October and November, but I believe they are more plentiful in the cold season. The local name is "Quetar" or "Quaitar."

88. ERISMATURA FERRUGINEA, Eyt.

Erismatura ferruginea, Salvad. B. M. C. xxvii. p. 449.

(Rio Pilmaiguen.)

I met with these birds on ponds or backwaters by the Rio Pilmaiguen, where they appeared, as well as I could make out, about the beginning of February. They seem to be incapable of flight, relying entirely on their power of diving, which equals that of the Grebes. The female is perhaps slightly smaller than the male.

[To be continued.]

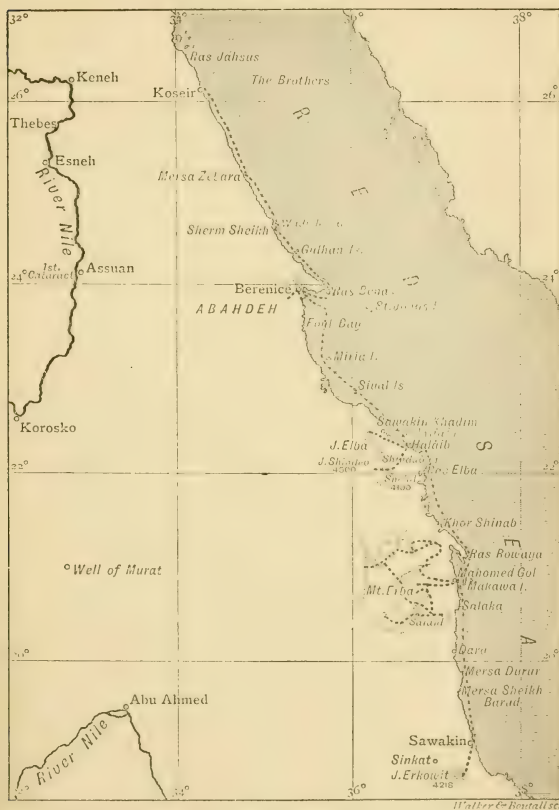
XVII.—*Notes on the Birds of the Western Coast of the Red Sea.* By ALFRED J. CHOLMLEY, F.Z.S.

IN the autumn of 1895 I was invited by Mr. Theodore Bent to join him in an expedition to the west coast of the Red Sea, his intention being in the first place to explore the ruins of the ancient town of Berenice, and, if possible, to go inland from there; but if this could not be done, to coast down the Red Sea and land as circumstances permitted. We left England on the 1st of December, 1895, and, after a stay of a few days in Cairo, we went to Suez to hire a boat of some kind, but found it rather difficult to decide among those that were offered to us. We at last chose a dhow of about 80 tons, named 'Tyceer,' which we got for £30 per month, with an Arab captain and a crew of 17 Arabs. She was a quaint-looking vessel, with low bows and very high stern, decked over for about 15 feet in the bows, and the same in the stern, where two cabins were constructed of rough boards under the stern-deck, for our accommodation. The boat was infested with many splendid specimens of the cockroach, and other insects even more unpleasant. Our reis and crew, however, all proved most excellent fellows, and, as a rule, seemed most anxious to please.

Our party consisted of Mr. and Mrs. Theodore Bent, Lieut. Smyth of the Queen's Bays, and myself; Mouthes Simos, a Greek, as cook; Annibale Piacentini, a Maltese; De Sostén, a Spaniard, as interpreter and guide; and two servants.

We left Suez the day after Christmas Day, and sailed all the first night down the Gulf of Suez, but afterwards, when we got among the coral-reefs of the Red Sea, we always anchored at night, sometimes behind a coral-reef, and sometimes in one of the small land-locked harbours abounding on the west coast. The first time we anchored was behind a reef called Sheikh Ganem, just at the entrance of the Gulf of Suez; and there, on a small patch of coral, were an Osprey, a large Grey-backed Gull, a Skua Gull, and three sorts of Sandpipers. A Dunlin was shot, but the others flew

away before they could be identified. There were also numbers of red and blue crabs, with bright red legs, running



MR. CHOLMLEY'S ROUTE ON THE WESTERN COAST OF THE RED SEA.

about. On another small sandbank there were tracks which were probably those of a wild cat, and an old nest of some large bird was on a pile of stones only a few feet above the sea.

After four days' sailing we reached Koseir, a very dilapidated-looking place, much decayed since the opening of the Suez Canal, as there were many houses, used formerly as consulates and merchants' dwellings, all more or less in a ruinous state. The trade of the place must have been very large, as it is said that 3000 camels used to arrive every day, and it was a point from which pilgrims sailed for Mecca.

On our way to Berenice we anchored one night in a small bay, where one of our party shot two Ospreys, which fell into the water, and were promptly taken down by some large fishes, probably sharks, which abound in these seas. Another night we stopped just inside Ras Benas, on the point of which dwells a holy man in a wretched hut, surrounded by desert, with no sign of life or vegetation. Our crew took him, what no doubt he considered, a very handsome present of tallow candles. This night a Booby (*Sula fiber*) came on board to roost, and was captured.

The Bay of Berenice, most properly called "Foul Bay" on the charts, is full of coral-reefs, and is a most dangerous place to navigate, many of the reefs being only just below the surface of the water. Two or three of the crew usually stood in the bows when navigation became difficult, and sometimes the captain climbed to the mast-head, whence he directed our course.

We arrived at Berenice on the 3rd of January. As we came into the bay, two dhows which were anchored there promptly departed; and we could see a few Arabs driving off their camels and sheep, seemingly in a great fright. The slave-trade is still carried on along this coast, the numerous land-locked bays making it singularly adapted for the purpose, while a run of a few hours across the Red Sea to the eastern side places the traders and their goods in safety. The country all round Berenice is nothing but sandy and stony desert, extending for about ten miles to a range of high rocky mountains with a singularly jagged outline. The desert has a few bushes of tamarisk and mesembryanthemum scattered sparsely about. There were small troops of White Egrets and Spoonbills wading in the shallow water on the edge

of the bay, with large flocks of Curlews. There were also flocks of Dotterel and a large Ringed Plover and several kinds of Sandpipers to be seen, but all so excessively shy that it was quite impossible to get a shot at them. I was much struck by the wildness of nearly all the birds during our expedition, although it was impossible they could ever have been disturbed. The only places where they were at all tame was at Halaib and Mahomed Gol, where the Egrets would only just move a few yards out of the way, and various kinds of Sandpipers ran about almost among the Arab huts. It was very amusing to watch the Egrets, only a few yards off, dash into a shoal of little fishes, scattering them in every direction. Bird-life was somewhat scarce in the desert round Berenice; there were two kinds of Wheatears (*Saxicola deserti* and *S. monacha*), a few Desert-Larks, and a small flock or two of the Cream-coloured Courser. There were a few gazelles about, and some small hares with immensely long ears. Before we had been many hours here, some white Egyptian Vultures appeared, and two pairs of the Brown-necked Raven. The so-called Temple of Berenice is really a tomb with several chambers, built of a very white crumbling stone; there are hieroglyphics on some of the walls, of which I got some good photographs.

After leaving Berenice, we sailed down inside the coral-reefs and anchored the first night behind Siyal Island—a low sandy island two or three miles long, 100 yards or so in width, only about 3 feet above the sea, and covered with two kinds of mesembryanthemum. A holy man lived here once, and his grave is at one end of the island. Many of these islands seem to be inhabited by hermits, dependent for everything on the pearl-fishers and Arabs, who supply them with food and water. There were three pairs of Ospreys here and two kinds of Sandpipers, of which I got one (*Calidris arenaria*). We caught some large, brilliantly-coloured fish while at anchor, and a queer-looking shark about 6 feet long. On January 14th we got to Halaib, which consists of a row of thatched huts and an octagon fort, whitewashed at one end. From here we first went to Sawakin Khadim, about

15 miles north of Halaib, where there is the site of an ancient town. We stayed here a few days exploring the site, but found nothing of value or of much interest except quantities of broken glass bracelets, of which there were so many that in the course of two hours I picked up pieces of 260 different patterns. While here we got a few Sand-Grouse, two young Shrikes (*Lanius fallax*), several specimens of the Stone-Curlew, and an Egyptian Goatsucker. One day while near the sea I saw two black Ducks, which I am sure were Velvet Scoters—the large yellow beak and black plumage showed distinctly, but they were too far off for a shot. There was no fresh water here, but the remains of three tanks, one of which was nearly perfect. We were much troubled here by a sandstorm, which lasted two days. The wind blew a gale from the south-west, and the sand drifted through every hole in the tents, and it was quite impossible to do any collecting.

The day after our return to Halaib, we hired camels and journeyed up to Shelal, about 20 miles inland, where we camped at the foot of the mountain of that name. It is about 4100 feet high, very rugged and bare, except in the gorges, which were full of creepers and vegetation of all sorts, while the talus at the foot was covered with mimosa-trees growing among loose stones, all rounded and water-worn, which made walking excessively hard. There were Turtle-Doves here (*Turtur roseogriseus*) and numbers of Grey Shrikes, one of which used to perch on a mimosa just over the tent and sing. The first night we were here two leopards paid us a visit, attracted, no doubt, by a freshly-killed sheep. They were the only beasts of prey we came across during the whole of our expedition from Suez to Sawakin.

The Abyssinian Sun-bird (*Cinnyris habessinica*) was found here. This was the only Sun-bird met with on the western coast of the Red Sea, and it was common everywhere. There was a good run of water here in one of the gorges about a mile away from our camp; we were informed that it lasted only four months in the year, though there must be some water during the dry season, or the birds could not exist.

On leaving Halaib we found a strong wind and big sea running from the north, and our dhow rolled very heavily. After a good run of about 60 miles, we put into a small land-locked harbour called Khor Shinab, the entrance to which could not have been more than about 80 yards wide, between coral-reefs, on which the sea was breaking heavily. The country round Khor Shinab is an absolute desert, being covered with sea-shells and pieces of coral up to the foot of the hills.

We arrived at Mahomed Gol on February 6th, and, after staying a day or two to arrange matters with the sheikhs, started with 14 camels on our journey to the Erba Mountains. After leaving Mahomed Gol, our way lay for some days through valleys like the dry beds of rivers, between low, barren, and rocky hills. Some of these valleys had curious lines of igneous rock running down and across them. In one of the valleys we came across some small herds of wild asses. These, the Arabs say, are escaped animals that have bred in the hills, which is probably true, as they seem larger than the true wild ass. At Haddai we camped at the mouth of a deep gorge with steep cliffs on both sides. At the other end of this there was a pool of water with a small stream running into it, where we got two kinds of Turtle-Doves (*Turtur roseogriseus* and *T. senegalensis*) and some blue Rock-Pigeons. Here a small brown Finch with darker stripes on the head was common, and *Sylvia blanfordi* was frequently seen. There were also flocks of the small Bengalee and some of the Abyssinian Sun-birds. The reddish-brown Sand-Partridge, which Mr. Ogilvie Grant has named *Ammoperdix cholmleyi*, was only seen singly or in pairs, but its shrill call was often heard among the rocks. In the evening, just as it got dark, scores of the Sand-Grouse came down to drink; these were all of the same kind, with black bars on the head.

The next few days of our journey took us through a most desolate country, consisting of valleys full of sand with a few bunches of dead grass and bushes, and spurs of low hills covered with loose shale and slate. In one of the valleys were the traces of an ancient gold-mine, with hundreds of well-

worn crushing-stones scattered about, and the remains of stone-built houses and furnaces. There were hardly any birds in this region—a few black-and-white Wheatears, and a small bird, black with a white tail, which was very wild, and which I failed to get. I think, from its habit, it was a *Saxicola*.

As we got near to Mount Erba the country improved much; there were large bushes of arrack, ten feet high and several yards across, with bright green fleshy leaves, with a very foxy smell, and trees of different kinds, in the valleys. This country was about 3000 feet above the sea, and the nights were very cold. Wadi Kour was very fine; Mount Erba, 8000 feet high, was right in front, looking pale pinkish-purple in the sunlight. We passed through narrow valleys with high rocky cliffs on each side, in some places covered with huge stones, where we had to dismount and lead the camels. Our destination was a place called Sellalat, where we had been promised by Sheikh Ali Hamet that we should find an oasis with large trees, green grass, and running water. When we arrived there we found no trees, no grass, and no running water—nothing but a waste of drifting sand and a well of dirty water. It was a great disappointment. We were taken to see some “antiquas,” about eight miles from Sellalat, which consisted of some large rocks covered with very ancient drawings of camels, elephants, and gazelles, mixed up with religious symbols. After leaving this we passed round the end of the Erba range and got into Wadi Ambaya and Wadi Kukut on the east side of the mountain. In Kukut there was a pair of the Abyssinian Raven, looking very quaint with their broad wings and short tails; they were not nearly so tame as the Brown-necked Raven that we had met with before.

We stayed only three days in these two wadis. It was very hot there, the valleys being narrow with high rocks at the sides, which got so hot that they could scarcely be touched with the bare hand. There was a good deal of both bird and insect life, the water-supply lasting the whole year, and much might have been done here with more time.

This was practically the end of our expedition. On the whole we had very little time for collecting, as on the journey through the Erba Mountains, which occupied 23 days, we were 16 days travelling on camels. During this part of the journey we had two expresses sent after us by the Governor of Suakin, ordering us to return at once, as there were rumours of Dervish raids. We therefore returned to Mahomed Gol and sailed direct to Suakin, nearly getting wrecked again on the way.

We never saw any Hawks during the expedition, and only one or two Eagles in the distance.

The temperature on the Red Sea was very pleasant, generally from 70° to 80° in the shade; there was usually a fresh breeze, and it was always cool at night. In the Erba Mountains the thermometer one night fell to 41°; this was about 3000 feet above the sea-level.

From Suakin we returned to Suez in the Khedivial steamer 'Rahamanieh,' a wretchedly slow old tub. While steaming up the Gulf of Suez we passed an immense flock of white Storks, which were crossing the Gulf in a northerly direction, and were just settling for the night on the coast near Tor. There must have been many thousands of them, as they looked like a swarm of bees.

The following is a systematic list of the birds obtained during the expedition. The specimens have been kindly named for me by Mr. Ogilvie Grant.

1. *PANDION HALIAËTUS*.

This Osprey was a very common bird all down the Red Sea.

2. *SYLVIA BLANFORDI*, Seebohm.

Sylvia melanocephala, Blanford (nec Gmel.), Geol. & Zool. Abyss. p. 379 (1870).

Sylvia blanfordi, Seebohm, Cat. B. Brit. Mus. v. p. 29, pl. ii. (1881).

Blanford's Warbler, undoubtedly the most interesting bird met with, has up to the present time been known only from the type specimen—an adult male, collected at Rairo, Abyssinia, in the month of August. This specimen was

obtained by Mr. W. T. Blanford during the British Expedition to Abyssinia, 1867-68, but was then erroneously identified by him with the nearly allied Sardinian Warbler (*S. melanocephala*). I found it not uncommon in some of the valleys of the Erba Mountains, but did not notice it further north than this range of hills. Besides the adult male brought back, I got another specimen, but, unfortunately, had not time to preserve it. It seems a quiet little bird, and may usually be seen perched on the topmost twig of some bush.

3. MYRMECOCICHLA MELANURA (Temm.); Seebohm, Cat. B. Brit. Mus. v. p. 360 (1881).

I shot an example of Temminck's Chat-Robin.

4. SAXICOLA XANTHOPRYMNA, Hempr. & Ehr.; Seebohm, Cat. B. Brit. Mus. v. p. 381 (1881); E. C. Taylor, Ibis, 1896, p. 478.

When Seebohm wrote the fifth volume of the catalogue of birds quoted above, he observed: "There is no example of this very rare Chat in the British Museum"; and his remark still holds good, though sixteen years have elapsed since it was made. Besides the three specimens mentioned by Seebohm, no additional examples had been recorded until February 1896, when Mr. E. C. Taylor obtained an adult bird close to the pyramids of Gizeh, as recorded above, and I found it not uncommon at Ras Rowaya in the Soudan. It was wild and difficult to get near, but I managed to secure a fine adult on the 3rd of February, 1896. The sex was not ascertained, but, judging by the black throat, the bird is probably a male.

5. SAXICOLA DESERTI, Temm.; Seebohm, Cat. B. Brit. Mus. v. p. 383 (1881).

The Desert-Chat was also met with, a male being obtained at Sawakin Khadim on the 19th January, 1896, and a female at the Erba Mountains in the following March.

6. PYCNONOTUS ARSINOE, Hempr. & Ehr.; Sharpe, Cat. B. Brit. Mus. vi. p. 148 (1881).

I shot a specimen of this Bulbul at Wadi Kukut, in the Erba Mountains, in the month of March.

7. *CERCOTRICHAS PODOBE* (P. L. S. Müll.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 83 (1883).

The African Ground-Robin was met with on Mount Shelal, on the 29th of January. This specimen, the only one I saw, was very shy. When it caught sight of me it darted down to the ground under a thick bush, and I had to wait some time before it showed itself again. It was very restless, hopping quickly about the bush.

8. *ARGYA ACACIÆ* (Licht.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 397 (1883).

An adult of the Nubian Babbler shot at Haddai, on the 12th of February, 1896. Mr. Blanford very rarely saw this bird in Abyssinia, but from what he observed of it, it had precisely the habits and appearance of *A. caudatus* of India. It was not uncommon, as I saw it in pairs and small flocks of five or six, at several places in the Erba Mountains and on the coast, and its note was often to be heard. On being approached, these birds always got to the far side of the bush, and flew close to the ground to another bush a little distance off. The one shot was on the ground when I first saw it, but I could not see what it was feeding on. The skin was tough and thick, and had a very strong smell.

9. *LANIUS FALLAX*, Finsch ; Gadow, Cat. B. Brit. Mus. viii. p. 247, pl. viii. (1883).

An adult of Finsch's Grey Shrike shot at Mount Shelal, on the 29th of January, 1896, has the black band across the bases of the upper mandible well defined, the basal two-thirds of the inner web of the penultimate pair of tail-feathers entirely black, and the secondaries widely tipped and margined on the inner web with white.

A quite young specimen was also procured at Sawakin Khadim on the 19th of January, 1896. It has the general colour of the upper parts dull earthy grey, and the black band across the forehead absent, though the characteristic markings of the adult are clearly shown in the wings and tail.

10. *CINNYRIS HABESSINICA* (Hempr. & Ehr.); Gadow, Cat. B. Brit. Mus. ix. p. 52 (1884).

The Abyssinian Sun-bird was common everywhere.

11. *COTILE OBSOLETA*, Cab.; Sharpe, Cat. B. Brit. Mus. x. p. 111 (1885).

The Pale Crag-Martin was obtained.

12. *EMBERIZA CÆSIA*, Cretzschm.; Sharpe, Cat. B. Brit. Mus. xii. p. 535 (1888).

A male of this Bunting was shot in the Erba Mountains in March; the species winters in North-east Africa and Arabia.

13. *UROLONCHA CANTANS* (Gmel.).

Aidemosyne cantans, Sharpe, Cat. B. Brit. Mus. xiii. p. 371 (1890).

This little Weaver-Finch, called by Latham the Warbling Grosbeak, was obtained at Haddai.

14. *AMMOMANES CINCTURA* (Gould); Sharpe, Cat. B. Brit. Mus. xiii. p. 644 (1890).

Though widely distributed—its range extending from the Cape Verd Islands through the deserts of North Africa to Nubia, Arabia, and Persia—the small Desert-Lark is a rare bird in most collections. The peculiar wedge-shaped black mark on the tail and the blackish tips of the primaries render it easily distinguished from other members of the group. We found the species quite common, and obtained an example at Berenice on the 7th January, 1896.

15. *AMMOMANES DESERTI* (Licht.); Sharpe, Cat. B. Brit. Mus. xiii. p. 646 (1890).

The Common Desert-Lark was collected at the Erba Mountains in March.

16. *PYRRHULAUDA MELANAUCHEN* (Cab.); Sharpe, Cat. B. Brit. Mus. xiii. p. 655 (1890).

Two males of the Black-crowned Finch-Lark, which ranges from Nubia and Abyssinia through Arabia and Baluchistan to North-west India, were shot at Berenice on the 6th of January. One of these birds differs from the typical adult

male in having the white spot at the base of the forehead nearly obsolete, though in other respects the two specimens are perfectly similar and appear to be fully adult.

17. *CAPRIMULGUS ÆGYPTIUS*, Licht. ; Hartert, Cat. B. Brit. xvi. p. 562 (1892).

A male shot at Sawakin Khadim on the 18th of January, 1896, is a typical example of the Egyptian Nightjar.

18. *TURTUR ROSEOGRISEUS* (Sundev.) ; Salvad. Cat. B. Brit. Mus. xxi. p. 429 (1893).

Very common everywhere.

19. *TURTUR SENEGALENSIS* (Linn.) ; Salvad. Cat. B. Brit. Mus. xxi. p. 448 (1893).

Only heard in two places in the Erba Mountains, and most common at Haddai, where I got two.

20. *PTEROCLES CORONATUS*, Licht. ; Ogilvie Grant, Cat. B. Brit. Mus. xxii. p. 23 (1893).

I shot a female of the Crowned Sand-Grouse at Mahomed Gol on the 5th of February, 1896.

21. *PTEROCLES LICHTENSTEINI*, Temm. ; Ogilvie Grant, Cat. B. Brit. Mus. xxii. p. 29 (1893).

Numbers of Lichtenstein's Sand-Grouse came to drink just before it got dark at the pool at Haddai.

22. *AMMOPERDIX CHOLMLEYI*, Ogilvie Grant, Game Birds, ii. Appendix, p. 293 (1896).

This species has been already described by Mr. Ogilvie Grant, in his second volume of 'Game Birds,' quoted above, and he has pointed out the differences between it and the typical *A. heyi*, from Arabia, as follows:—"On comparing these and two other African males recently added to the British Museum Collection with the typical examples of *A. heyi* from Arabia, I find that the former differ constantly in having the general colour of the upper parts darker, and in *lacking entirely* the white forehead and lores characteristic of *A. heyi*. Measurements the same as those of *A. heyi*. Adult female similar to the female of *A. heyi*. Range, Egypt and Nubia."

This species was not uncommon at Haddai, and I obtained two males in the Erba Mountains on the 7th of February.

Examples from Egypt, Dendor, in Nubia, and from the neighbourhood of Suakin have recently been added to the National Collection.

23. *ÆDIGNEMUS SCOLOPAX* (S. G. Gm.).

Ædignemus ædignemus, Sharpe, Cat. B. Brit. Mus. xxiv. p. 4 (1896).

The Common Stone-Curlew was met with at Sawakin Khadim. Out of several seen, three were shot on the 18th of February, 1896.

24. *CURSORIUS GALLICUS* (J. F. Gm.) ; Sharpe, Cat. B. Brit. Mus. xxiv. p. 34 (1896).

I met with the Cream-coloured Courser, in small numbers, at Berenice on the 7th of January.

25. *STREPSILAS INTERPRES* (Linn.).

Arenaria interpres, Sharpe, Cat. B. Brit. Mus. xxiv. p. 92 (1896).

Two Turnstones were shot at Berenice ; they were common all down the coast, and very tame at Halaib and Mahomed Gol, running about the quay in small flocks close to the Arab huts.

26. *HEMATOPUS OSTRALEGUS*, Linn. ; Sharpe, Cat. B. Brit. Mus. xxiv. p. 107 (1896).

A Common Oyster-catcher shot at Halaib on the 23rd of January, 1896.

27. *TOTANUS CALIDRIS* (Linn.) ; Sharpe, Cat. B. Brit. Mus. xxiv. p. 414 (1896).

A Redshank was obtained.

28. *CALIDRIS ARENARIA* (Linn.) ; Sharpe, Cat. B. Brit. Mus. xxiv. p. 526 (1896).

Small flocks of Sanderlings were seen at Siyal Island, Red Sea, and two were shot on the 12th of January, 1896.

29. *TRINGA ALPINA*, Linn.

Pelidna alpina, Sharpe, Cat. B. Brit. Mus. xxiv. p. 602 (1896).

A Dunlin was obtained at Ras Sophia, Red Sea, on the 28th of December, 1895.

30. *DEMIEGRETTA GULARIS* (Bosc).

This little white Egret was common everywhere; a pair were shot at Berenice.

31. *SULA FIBER*, Linn.; Heuglin, Orn. Nordost-Afr. iv. p. 1483, & Appendix.

An immature Booby, caught on the dhow, has the white breast and belly of the adult indistinctly showing through the sooty-brown plumage of youth.

XVIII.—*On the Birds of the Philippine Islands.*—Part IX.*
The Islands of Samar and Leite. By W. R. OGILVIE GRANT. *With Field-Notes by JOHN WHITEHEAD.*

(Plates V. & VI.)

ABOUT the middle of May, 1896, Mr. John Whitehead once more left Manila for the island of Samar, to make another collection in place of the one which had been lost off Singapore. There is no really high ground in Samar, and nowhere do the hills attain a greater altitude than about 1500 feet above sea-level. The greater part of the island is covered with a dense and lofty forest, many of the trees being over 240 feet high. Under these circumstances collecting was often a matter of difficulty, for birds, especially large ones, some 80 yards overhead are hardly to be brought down with a charge of shot from any ordinary gun. The climate is hot and damp, and, as might be expected, the rainfall unusually heavy, while the mud, for which the island is

* For Part I. see Ibis, 1894, pp. 406-411; Part II. *ibid.* pp. 501-522; Part III. Ibis, 1895, pp. 106-117; Part IV. *ibid.* pp. 249-267; Part V. *ibid.* pp. 433-472; Part VI. Ibis, 1896, pp. 101-128; Part VII. *ibid.* pp. 457-477; Part VIII. *ibid.* pp. 525-565.

almost proverbial, renders locomotion most disagreeable. With very few exceptions, the present collection from Samar contains all the more important birds previously met with, but a little Owl (*Scops* sp.), the lovely Blue Flycatcher (*Cyanomyias helenae*), and the Flower-pecker (*Prionochilus olivaceus*) were not again seen. There were also a number of less important forms from the higher ground which were not procured on the second expedition, such as *Ninox philippensis*, *Corone philippina*, *Zeocephus rufus*, *Megalurus ruficeps*, *Copsychus mindanensis*, *Macropteryx comata*, *Chalcococcyx xanthorhynchus*, *Chalcophaps indicus*, and *Amaurornis olivaceus*; while from Calbega, on the west coast, *Elanus hypoleucus*, *Cinnyris jugularis*, *Calornis panayensis*, *Pelargopsis gigantea*, *Numenius arquatus*, *Limosa egocephala*, *Scolopax megala*, *Phoyx manillensis*, *Butorides javanica*, *Anas luzonica*, and *Dendrocygna arcuata* were among the birds lost. Of all these, the little Owl (*Scops* sp.) is the most serious loss, for it appears to have belonged to an undescribed species.

On the other hand, several remarkable species not included in the first collection were added to the list, among these may be specially mentioned the Great Forest-Eagle (*Pithecophaga jefferyi*). The discovery of this new and splendid bird of prey was well worth the second expedition to Samar, and to some extent makes up for the loss of the previous collection.

On the 25th of July it was determined to change the collecting-ground and, if possible, to reach the neighbouring island of Biliaran in a large open boat; but the wind, at this season of the year from the south-west, was blowing a gale, and the boat, failing to reach her destination, shaped her course for the north of Leite, which is much nearer and more sheltered. Mr. Whitehead arrived there on the night of the 27th, and moved inland to a small village near the mountains. Here porters were obtained, and a camp was formed at a spot about 1000 feet above the sea. The mountains in this island range from 5000 to 7000 feet; but no collecting could be done in the really high ground, for the paths and

roads were at this season impossible for porters, and, to make matters worse, the birds were mostly in full moult. Having spent three weeks in Leite, Mr. Whitehead thought it advisable to return to Manila, and after a rough voyage arrived there safely on the 8th of September. On landing he found that the Indians had risen, and the whole neighbourhood of Manila was in a state of active rebellion. Martial law had been proclaimed, and as it was impossible to obtain a permit to leave the town with firearms, a couple of months were spent waiting for matters to quiet down, but in vain. To remain in Manila was obviously a waste of time, so in November it was determined to return home, *via* America. Mr. Whitehead arrived in England at the end of last December, after an absence of more than three years.

That the bird-life in Samar and Leite should prove almost identical is scarcely surprising, for the islands lie close together, being only separated at one part by a very narrow channel some few hundred yards wide. It has not therefore been thought necessary to divide this paper into two parts, but in every case care has been taken to mention the island or islands where each species was obtained.

The present collections contain many birds of particular interest, and besides the wonderful Forest-Eagle mentioned above, there are several other new species, such as the tiny Falcon (*Microhierax meridionalis*), the Pigmy Babbler (*Zosterornis pygmaeus*), and two Flower-creepers (*Rhabdornis minor* and *R. inornatus*).

A number of nests and eggs have been collected in the various islands of the Philippine group visited by Mr. Whitehead; and as many of the eggs were hitherto unknown, we hope at some future time to give an account of them, with figures of the more important.

It is greatly to be regretted that the insurrection in the Philippines has for the present rendered it impossible for Mr. Whitehead to continue his explorations in the highlands; but constant exposure to a trying climate and insufficient food had begun to tell on his health, and it was high time that he should have a rest from his labours. It is, however, a

matter for congratulation that he is now rapidly regaining his strength.

1. *ASTUR TRIVIRGATUS* (Temm.); Sharpe, Cat. B. Brit. Mus. i. p. 105 (1874); Steere, List of Birds & Mamm. Philippines, p. 7 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 32 (1894).

The Crested Goshawk is evidently rather a rare bird in the Philippines, as this is the first time specimens have been received from Mr. Whitehead. Two males were obtained in Samar, both belonging to the smaller race met with in Southern India, Ceylon, and Sumatra. It was from the last island that Temminck described his *Falco trivirgatus*.

2. *ACCIPITER MANILLENSIS*, Meyen; Grant, Ibis, 1895, p. 438; 1896, pp. 108, 109.

A beautiful little male of the Manila Sparrow-Hawk was obtained in Leite. It differs somewhat from the most adult males in the British Museum series, and is evidently a very old bird. The entire chest and breast are uniform dull light red, only a few hidden feathers showing traces of the dark transverse bands characteristic of younger examples; the dark shaft-stripes, which usually form a well-marked band down the middle of the throat, are much reduced in width, *as in males of Accipiter gularis*. It is clear, however, that the Leite bird does not belong to the latter species; the shape of the wing, with the fourth primary quill only slightly longer than the fifth, the small dimensions, and the colour of the chest and breast being all characteristic of *A. manillensis*. Wing (in moult) 5.9 inches, tail 4.2, tarsus 1.95.

3. *SPILORNIS HOLOSPILUS* (Vigors); Grant, Ibis, 1896, p. 527.

Two fully adult females of this Serpent-Eagle have the plumage of the underparts of a deep rich chestnut, and bear out the remarks already made when writing of *S. panayensis*, Steere, from Negros.

[This Serpent-Eagle is a common bird in the Philippines, and frequents the borders of forests. It is easily approached when sitting gorged on the end of a branch.—J. W.]

4. *PERNIS CRISTATUS*, Cuv. ; Blanford, Fauna Brit. Ind., Birds, iii. p. 406 (1895).

Pernis ptilonorhynchus, Grant, Ibis, 1894, p. 503; 1895, pp. 108, 251.

The proper name for the Honey-Buzzard found in the Philippines is comparatively a matter of secondary importance. As Mr. Blanford has shown, *cristatus* of Cuvier has priority over Temminck's name *ptilonorhynchus*, both based on birds from Sumatra. But the main question to be settled is this:—Are the birds from India commonly called *P. ptilonorhynchus* really of the same species as those found in Sumatra, Java, &c., and the Philippines? The Samar collection contains a bird in very much more adult plumage than those previously received from Luzon, and though in moult, the longest crest-feather measures nearly 3 inches. In the young birds from Luzon the crest, though shorter, is well developed.

Dr. Sharpe [*cf.* Cat. B. Brit. Mus. i. p. 349 (1874)] mentions that a bird from Java in the Leiden Museum has a black crest 3·7 inches long. A specimen from Sumatra, in the Tweeddale collection, has the longest crest-feathers broken, but when complete they no doubt measured 3 inches or more. We have but a small number of birds from these islands for comparison, and none are really mature (?); but the British Museum series contains many fully adult Honey-Buzzards from India, and a still larger number of younger examples in all stages. Though the feathers on the nape of adult Indian birds are somewhat lengthened and pointed, and generally accentuated by their blacker colour, *none are conspicuously longer than the rest*. Consequently these birds cannot appear crested when alive. Dr. H. O. Forbes, however, informs us that all the Honey-Buzzards he saw and collected in Sumatra possessed a long crest, which stood out conspicuously when the birds were at rest. Again, in all the long-crested birds from the Philippines the chest-feathers have wide black club-shaped shaft-stripes, most strongly marked in older examples, in which they contrast strongly with the barred plumage of the belly and flanks.

In immature birds from the Philippines the shaft-stripes are confined to the chest, the rest of the underparts being uniform whitish buff; while in Indian birds of the same age *all* the underparts have much narrower black shaft-stripes. The plumage of the underparts in the most adult Philippine bird most nearly resembles that of *Pernis tweed-dalii*. It seems evident that the intricate changes of plumage in these birds require more careful study, but the material available is at present insufficient.

5. PITHECOPHAGA JEFFERYI. (Plate V.)

Pithecophaga jefferyi, Grant, Bull. B. O. C. no. xl. p. xvii (1896).

The discovery of this mighty bird of prey is without doubt the most remarkable of Mr. Whitehead's achievements in the Philippine Islands. That so large a Raptor should have remained unknown till the present time only shows how easily these great Forest-Eagles may be overlooked. As an instance of this, it is worth mentioning that during the years Mr. Salvin spent collecting birds in Central America he only once saw a Harpy Eagle. The fact is that in the dense and lofty forests where these birds make their home it is almost impossible to see them, and still more difficult to obtain a shot.

Of the present species the only example obtained was a male in moult, with the majority of the quills of both wings and tail much worn and broken at the tips. The new quill-feathers of these parts, though not quite fully grown, are very important evidence, since they not only show the true shape and colour of the perfect plumage, but indicate that the bird is fully adult.

The type of the present description was the male of a pair which had their abode in the forest opposite Mr. Whitehead's camp, in the island of Samar, and were daily seen on the wing. As already mentioned, there are no high mountains on the island, which is covered with a dense and extremely lofty forest-growth, many of the trees attaining the gigantic stature of 240 feet or more, as was ascertained by the actual

160, 1891, 1914



Illustration of a bird of prey

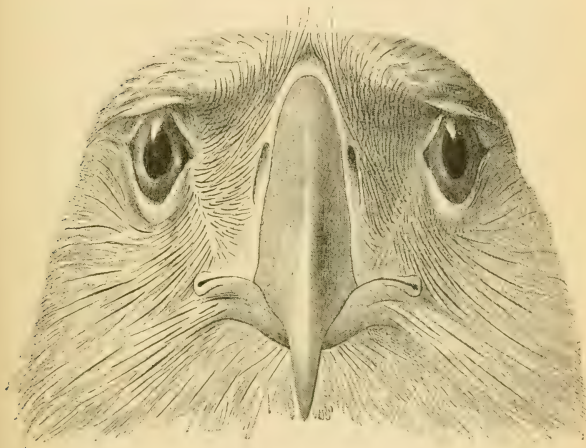
Illustration of a bird of prey

Illustration of a bird of prey



measurement of fallen trunks. For many days these birds were watched with longing eyes, for their great size on the wing and strange wailing cry seemed to indicate something new and most desirable. At last one of Mr. Whitehead's collectors succeeded in shooting the male, which he brought into camp. He had been fortunate enough to see the bird perch on one of the highest trees, and obtained a chance of securing this much coveted prize. A well-directed buck-shot entered the neck, and though it failed to bring the

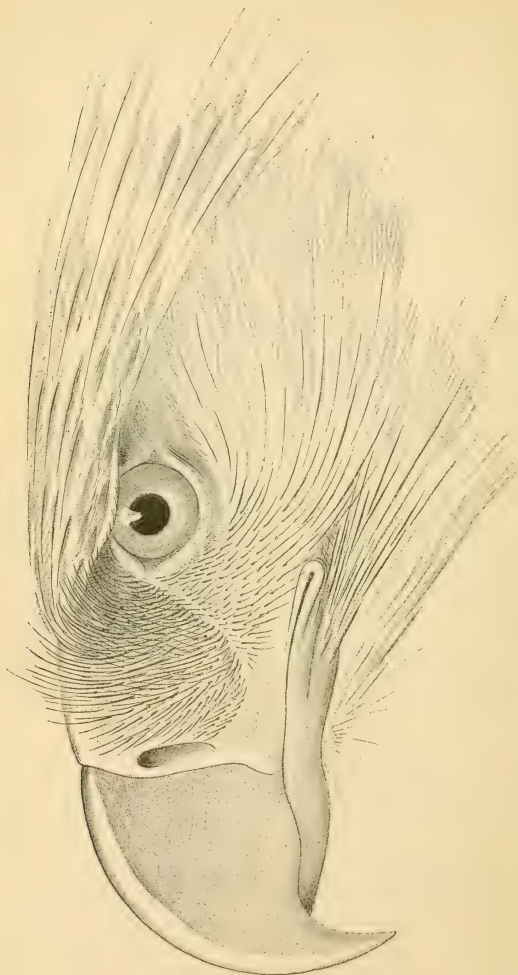
Fig. 1.



Pitheophaga jefferyi. Front view of head: $\frac{1}{10}$ natural size.

great Eagle down, rendered its escape almost impossible. To give some idea of the height of the trees, we may add that this man subsequently fired several times at the wounded bird with number 4 shot, but when it was examined not one of these pellets had penetrated the skin! The Eagle was eventually secured by the native, who climbed the tree and unloosed its powerful claws, which were still clinging to the branches. Mr. Whitehead says that it weighed between

Fig. 2.



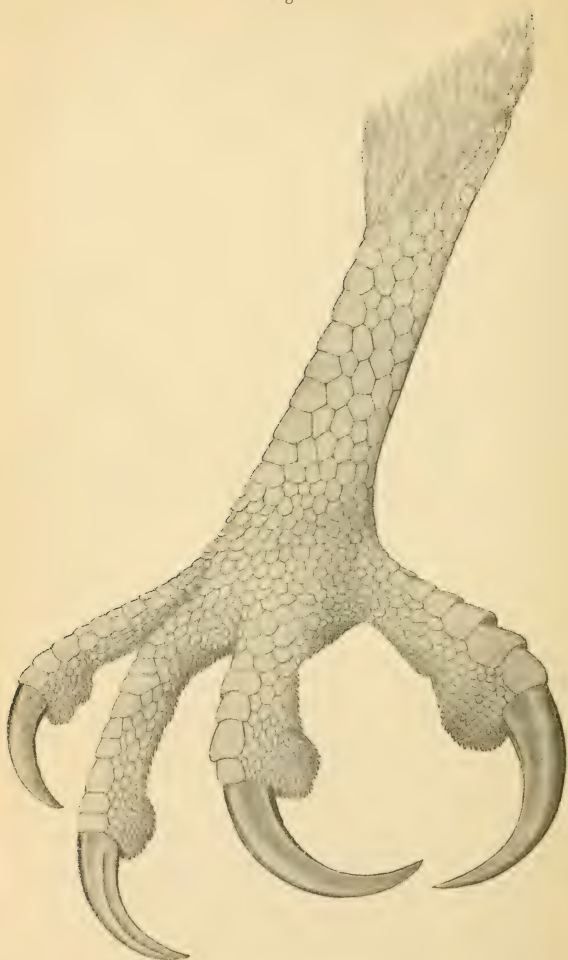
Pithecophaga jefferyi. Side view of head: $\frac{9}{16}$ natural size.

16 and 20 lbs., and that, in his then enfeebled state of health, it was as much as he could do to hold the bird out at arm's length.

The Plate by Mr. Keulemans, though an excellent representation of the bird, is necessarily much reduced, being only one-sixth of the natural size, so that the peculiar characters of the bill and feet are not clearly enough shown. These parts have, however, been very carefully drawn by Mr. H. Grönvold, and the extraordinary shape and size of the bill are accurately represented by the front and side views of the head $\frac{9}{16}$ of the natural size (see figs. 1 and 2). The outline of the culmen describes the perfect segment of a circle, the centre of which is the base of the cere where it joins the cutting-edge of the upper mandible. This may be seen by placing a pair of compasses on the figure representing the side view of the head. The depth of the bill is greater than that of any known bird of prey, except Pallas's Sea-Eagle (*Haliaëtus pelagicus*), in which it is sometimes a trifle greater, while such extreme narrowness, compared with the depth, is quite unique in birds of this order. It is only among some Parrots, such as the Black Cockatoo (*Microglossus aterrimus*), that we find a bill approaching this type, but in none of these is it laterally compressed to the same extent. The high vaulted nasal opening, set almost vertically, is another peculiar character. The naked tarsi and feet approach those of the Harpy Eagle (*Thrasaëtes harpyia*) in size and strength, and the scaling of the tarsi is remarkably similar, as is well shown in figs. 3 & 4. Strange as it may seem, we have little doubt that the Harpy is the nearest known ally of the present species.

It is to be regretted that the bones of the body were not preserved, as it would have been very interesting and important to compare these with the skeleton of the Harpy Eagle or other allied species. An attempt was made by means of the X-rays to photograph the skull still left in the skin; but this is unfortunately stuffed with hemp, which proves to be almost impervious. The bones of the bill and the shape of the skull and mandible are, however, clearly

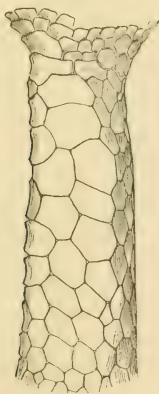
Fig. 3.

*Pithecophaga jefferyi*. Right metatarsus: $\frac{3}{4}$ natural size.

shown in the photograph, and it may be plainly seen that the nasal cavities are divided one from another by a bony septum. The skull is enormous, very much larger than that of the Harpy, with which it has been compared. On some future occasion we hope to give exact details, for, when the opaque material which fills the skull has been removed, there is no reason why the Röntgen process should not prove entirely successful.

According to the natives of Samar, this Forest-Eagle is well-known to them, and preys chiefly on the Green Monkeys

Fig. 4.



Pithecophaga jefferyi. Hinder aspect of right metatarsus: $\frac{3}{4}$ natural size.

(*Macacus cynomolgus*), though it not infrequently visits the villages and carries off domestic poultry. The worn and broken ends of the quills of both wings and tail no doubt bear testimony to many a savage struggle amongst the branches.

Though this Eagle was not seen during Mr. Whitehead's short stay in the island of Leite, its cry was frequently heard, and it no doubt occurs there. It will probably also be met with in other islands of the Philippine group, for

Mr. Whitehead was informed by a native that a specimen had been obtained in Luzon.

Pithecophaga jefferyi, perhaps the most remarkable bird which has been discovered in the Philippines, has been named at our friend's wish in honour of his father, Mr. Jeffery Whitehead.

6. *MICROHIERAX MERIDIONALIS*, sp. n.

All the examples of *Microhierax* hitherto recorded from the Philippine Islands have been identified with *M. erythrogenys* (Vigors). The type of this species, which was described from the island of Luzon, is preserved in the British Museum. By referring to the 'Ibis,' 1894, p. 407, it will be seen that we have already pointed out a well-marked sexual distinction in the plumage of the Luzon Pigmy Falcon, which had apparently been overlooked in previous descriptions of *M. erythrogenys*. The males of this species have the inner webs of the primary-quills barred with white, while in the females these parts are uniform black.

The Samar collection contains a male and two females of a *Microhierax*, which at the first glance seemed different from typical *M. erythrogenys*, both on account of their larger size and the absence of the white wing-bars in the male. From a more careful examination of these three specimens and the series in the British Museum, it seems certain that two species occur in the Philippines, but have been confounded with one another. The Luzon birds seem to be quite distinct from the larger species found in the more southern islands of Samar, Cebu, and Mindanao, for which the name of *Microhierax meridionalis* is proposed.

The new species may be characterized as follows:—

Adult male. Similar to the male of *M. erythrogenys*, but considerably larger; the under wing-coverts and inner webs of the primaries uniform black; and the belly, vent, and under tail-coverts washed with pale fulvous. Total length 6·5 inches, culmen (from cere to tip) 0·51, wing 4·45, tail 2·6, tarsus 0·85.

The type of the male is from Zamboanga, Southern Mindanao.

Microhierax erythrogenys (Vigors).

Luzon.

	Wing. in.	Locality.	Collector.		Wing. in.	Locality.	Collector.
Adult ♀	4.25	Mount Arayat.	J. Whitehead.	Adult ♂	4.05	Mount Arayat.	J. Whitehead.
"	4.25	"	"	"	4.02	Lepanto.	"
"	4.25	Monte Alban.	A. H. Everett.	"	4.05	Laguna de Bai.	A. H. Everett.
"	4.35	Laguna de Bai.	"	" [♀]*	4.0	Luzon.	A. B. Meyer.
"	4.35	Luzon.	J. B. Steere.				
"	4.45	"	A. B. Meyer.				
" [♂]*	3.9 (in full moult).	"	J. B. Steere.				

* No doubt the sex has been wrongly determined.

Microhierax meridiionalis, sp. n.

	Wing. in.	Locality.	Collector.		Wing. in.	Locality.	Collector.
Adult ♀	4.8	Cebu.	A. H. Everett.	Adult ♂	4.3	Samar.	J. Whitehead.
"	4.6	Samar.	J. Whitehead.	" (type)	4.45	Zamboanga, Mindanao.	A. H. Everett.
"	4.6	"	"	"	4.35	Ayala, Mindanao.	J. B. Steere.
"	4.6	Zamboanga, Mindanao.	A. H. Everett.				

Inner webs of primaries black.

Inner webs of primaries black.

Inner webs of primaries black.

Inner webs of primaries barred with white.

Adult female. Similar to the male, but larger. Total length 7·2 inches, culmen (from cere to tip) 0·5, wing 4·6, tail 2·75, tarsus 0·87.

The type of the female is from the island of Samar.

The preceding table (p. 221) of comparative measurements is a record of the specimens examined, in which the sex and exact locality are mentioned.

[A pair of the Samar Pigmy Falcon were observed nesting in the charred trunk of a dead tree left standing on a native clearing. They were engaged in rearing their young, whose cries could be heard, but, owing to the rotten condition of the trunk and the great height of the nest from the ground, it was found impossible to get at them.—J. W.]

7. *POLIOAËTUS ICHTHYAËTUS* (Horsf.); Sharpe, Cat. B. Brit. Mus. i. p. 452 (1874); Steere, List Birds & Mamm. Philippines, p. 8 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 33 (1894).

There is a fine adult pair of the large Grey-headed Fishing-Eagle from the island of Samar. The species has previously been recorded from Mindoro, Calamianes, Mindanao, and Basilan.

[This Eagle is generally found frequenting the coast and salt-water lagoons; but the pair obtained in Samar were met with in a mountainous district miles from the coast, living on the fish caught in the clear waters of a river.—J. W.]

8. *NINOX PHILIPPENSIS*, Bonap.; Grant, Ibis, 1896, p. 531.

An adult male from Leite agrees perfectly with typical examples from Luzon, and differs from birds from Negros and the other central islands. Full particulars will be found in our previous paper, quoted above.

[Iris bright straw; bill greenish yellow; feet straw-yellow.—J. W.]

9. *ORIOLOUS CHINENSIS*, Linn.; Grant, Ibis, 1896, p. 532.
An adult male of the Chinese Oriole from Samar.

10. *ORIOLUS SAMARENSIS*, Steere, List of Birds & Mamm. Philippines, p. 17 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 54 (1894); Grant, Ibis, 1896, p. 533.

There is a fine adult pair of the striped Samar Oriole from that island, and a less mature male from Leite. The latter undoubtedly belongs to this species, which is referred to in our previous paper on the birds of Negros, quoted above.

[*Adult*. Iris red, bill pinkish brown; feet grey-black. *Immature*. Iris grey; bill dull brownish pink; feet dusky grey.

This species, according to my experience, was extremely rare in both islands, the first Samar collection, which was lost, only containing four specimens.—J. W.]

11. *DICRURUS STRIATUS*, Tweed. P. Z. S. 1877, p. 545; Steere, List Birds & Mamm. Philippines, p. 15 (1890).

Mr. Whitehead obtained the Striped Drongo on both Samar and Leite. It may be worth calling attention to the outermost flank-feathers, which are pale grey in younger examples, and nearly pure white in the fully adult. This rather marked character appears to have escaped Lord Tweeddale's notice, for he does not mention it in the original description.

This species is also known to occur in Panaon, Nipah, Mindanao, and Basilan.

[Iris dark brown; bill and feet black.—J. W.]

12. *LALAGE MINOR* (Steere); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 41 (1894).

Pseudolalage minor, Steere, List of Birds & Mamm. Philippines, p. 15 (1890).

This rare Cuckoo-Shrike, which was originally described by Prof. Steere from examples from Mindanao, and subsequently recorded by Messrs. Bourns and Worcester from Samar, has now been found in Leite. Mr. Whitehead obtained two males and one female, which agree perfectly with Steere's types.

13. *ARTAMIDES MINDANENSIS*, Steere, List Birds & Mamm. Philippines, p. 14 (1890); Grant, Ibis, 1896, pp. 536, 537.

Of the Mindanao Cuckoo-Shrike I have received a pair: a female from Samar and a male from Leite, the latter island being a new locality. The relations of this species are discussed in my previous paper, cited above.

[Iris and bill black; feet greyish black.—J. W.]

14. *PERICROCOTUS LEYTENSIS*, Steere, List Birds & Mamm. Philippines, p. 15 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 41 (1894).

There are several examples of the Leite Minivet from that island, as well as from Samar, whence it had already been procured. Prof. Steere's type, an adult male from Leite, agrees in every particular with a similar bird shot by Mr. Whitehead in Samar; both have six or seven of the inner secondary-quills ornamented on the outer webs with orange-red subterminal drops. But this character, as we have already shown, is variable, and cannot be altogether relied on.

15. *HYPOTHYMIS AZUREA* (Bodd.); Grant, Ibis, 1896, p. 540.

The Black-naped Flycatcher is also represented from both collections.

It may here be noted that the type of *Cyanomyias caelestis* (Twedd.) differs considerably from the two examples in the Steere collection obtained respectively at Samar and Basilan. In both these, the top of the head, long feathers of the occiput, and the mantle are cobalt, with a slight greenish tinge; while in the type these parts are strongly washed with purple, and the throat and fore neck are much richer purple-blue. The birds from Samar and Basilan resemble one another in plumage; the former is marked male, the latter female. I do not question the specific identity of these three birds: that from Samar is no doubt an immature male, and if the female from Basilan is fully adult, which she has every appearance of being, the sexes differ one from another in the colour of the head, mantle, and throat. This is

probably correct, for in the allied *C. helenæ* Messrs. Bourns and Worcester point out a similar difference in the plumage of the female.

Mr. Whitehead obtained this bird in the first collection from Samar, which was lost.

16. *HYPOTHYMIS SAMARENSIS*, Steere, List Birds & Mamm. Philippines, p. 16 (1890).

The Blue-browed Flycatcher of Samar is represented from both islands; it has been well characterized by Prof. Steere, and is quite distinct from *H. superciliaris*, Sharpe, from Mindanao and Basilan. The male and female are alike in plumage. Mr. Whitehead considers that this bird belongs to the genus *Rhipidura*, and is not a *Hypothymis*, as Prof. Steere supposed. I think, however, that the present species is better placed in the genus *Hypothymis*. *Rhipidura* has the tail rounded, the outer feathers being much shorter than the middle pair, which are considerably longer than the wing; but in the bird before us the measurements of the wing and tail are exactly equal, and the outer tail-feathers are scarcely shorter than the middle pair; this is exactly what we find in *Hypothymis azurea*. The only reason I can see for not placing *H. samarensis* in *Hypothymis* is the strong bristles surrounding the upper and lower mandibles exceeding the bill in length.

[Iris and bill black, base of lower mandible whitish; feet brown, greyish blue at the joints of the scales.—J.W.]

17. *RHINOMYIAS RUFICAUDA* (Sharpe); Sharpe, Cat. B. Brit. Mus. iv. p. 368 (1879); Grant, Ibis, 1896, pp. 541, 542.

Setaria samarensis, Steere, List Birds & Mamm. Philippines, p. 16 (1890).

In the paper on the Negros birds, quoted above, it has been shown that *R. samarensis*, Steere, is synonymous with *R. ruficauda*. A key to the different species of *Rhinomyias*, and a list showing the range of each, is also given in the same paper. The Rufous-tailed Flycatcher is in both collections, this being the first time that it has been recorded from Leite.

[Iris and bill black; feet dull pinkish brown.—J. W.]

18. *MUSCICAPULA SAMARENSIS*, Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 26 (1894).

The Samar White-browed Flycatcher is described by Messrs. Bourns and Worcester as having the sexes alike, but a mistake has evidently been made in ascertaining the sex of the slate-coloured bird described as a female. Mr. Whitehead obtained two pairs of this species, and the females differ entirely from the males in the colour of the upper parts, which are rusty brown, while the strongly marked white eyebrow-stripes are practically absent. There cannot be the slightest doubt that the rufous-brown females are fully adult, for one was shot from a nest with four eggs, and that they belong to the same species as the slate-grey males is almost equally certain.

I observe that the type of *M. mindanensis*, Blasius (J. f. O. 1890, p. 147), a grey bird, is said to have been a female, but here probably a mistake has been made. There are two adult grey examples of this Flycatcher from the Steere collection, both of which are said to be males, and they agree perfectly with the description of the type.

The description of the female of *M. samarensis* is as follows:—Upper parts rusty brown, darkest on the crown, and shading into chestnut on the upper tail-coverts, the superciliary stripes of the male only represented by a white feather or two on the sides of the occiput; wings and tail dark brown, the exposed parts of the quills mostly chestnut; sides of the head and neck light rusty brown, palest round the eye, and forming a rather marked ring; underparts much like those of the male, but the indistinct grey pectoral zone is replaced by one tinged with rusty; thighs brownish buff, under tail-coverts buff. The type measures:—Total length 4·3 inches, culmen 0·55, wing 2·4, tail 1·45, tarsus 0·75.

A second female measures:—Total length 4·3 inches, culmen 0·59, wing 2·46, tail 1·48, tarsus 0·75.

In general appearance the female of *Muscicapula samarensis* bears a close resemblance to *Rhinomyias ruficauda*, the underparts being strangely alike in both. The latter species is, however, easily recognized by its much longer tail.

[Iris and bill black ; tarsus bluish white ; feet white.—
J. W.]

19. *CULICICAPA HELIANTHEA* (Wallace) ; Grant, Ibis, 1896,
p. 542.

This little Yellow-breasted Flycatcher is now recorded from
Leite for the first time. It is also known to occur in Luzon,
Negros, Panay, Palawan, and Celebes. It will probably be
found to inhabit the high ground of the southern islands of
the Philippine group.

20. *CRYPTOLOPHA OLIVACEA* (Moseley) ; Grant, Ibis, 1896,
p. 543.

An adult and a young male of the Olive Flycatcher-
Warbler from Samar, and an adult male from Leite ; the
latter locality is new.

The young bird has the crown entirely olive-green, and
the throat washed with pale yellow.

21. *POLIOLOPHUS UROSTICTUS* (Salvad.) ; Grant, Ibis, 1896,
p. 116.

Pycnonotus urostictus, Tweeddale, Trans. Zool. Soc. ix.
pl. xxxii. (1875).

Poliolophus basilanicus, Steere, List Birds & Mamm.
Philippines, p. 19 (1890).

Though two species of the Wattled Brown Bulbul are
recognized by Prof. Steere, there can be no doubt that
P. basilanicus is synonymous with *P. urostictus*. It is true
that the type of the male, a freshly moulted bird from
Basilan, has the upper parts of rather a brighter olive than
usual ; but the female type from the same island is identical
with specimens from Mindanao and other more northern
localities.

Mr. Whitehead writes that the naked skin round the eye
is of a pale lemon-yellow, and forms a conspicuous character
when the bird is alive. This yellow ring and the peculiar
black and white markings on the feathers of the lower back
are omitted in the figure given by Lord Tweeddale, and
quoted above ; but the former is well shown in the woodcut
given by Dr. Sharpe (Cat. B. Brit. Mus. vi. p. 63, 1881).

22. *PRYCNONOTUS GOIAVIER* (Scop.) ; Grant, *Ibis*, 1895, p. 446.

The Yellow-vented Bulbul was met with on both islands.

23. *IOLE EVERETTI* (Tweedd.) ; Sharpe, *Cat. B. Brit. Mus.* vi. p. 57 (1881) ; Steere, *List Birds & Mamm. Philippines*, p. 19 (1890).

The type of Everett's Yellow Bulbul is a male from Northern Mindanao. The species has also been met with in the islands of Dinagat, Samar, and Leite, and examples from both the last-named islands are included in the present collection. As in all the birds of this genus, the adult male and female are similar in plumage.

[Iris lake-brown ; upper mandible black, lower dull slate-blue ; legs brownish pink.—J. W.]

24. *IRENA ELLÆ*, Steere, *List Birds & Mamm. Philippines*, p. 18 (1890) ; *id.* *Ibis*, 1891, p. 313, pl. viii.

There are examples of the Samar Fairy Blue-bird in both collections.

[Iris lake-red ; bill and feet black. When I arrived at Samar, in the middle of May, these birds were in splendid plumage, but most difficult to obtain, owing to their habit of frequenting the topmost branches of the highest trees, though their peculiar whistling note might be heard almost any day. In Leite, however, I found this species abundant at an elevation of about 1000 feet, frequenting even low growth ; but they were then in full moult and not worth collecting.—J. W.]

25. *ORTHOTOMUS SAMARENSIS*, Steere, *List Birds & Mamm. Philippines*, p. 20 (1890).

There is a small series of this beautiful Yellow-breasted Tailor-bird, hitherto only known from the male type obtained by Prof. Steere in Samar. The plumage of the female still remains unknown, for all the specimens in the present collections prove to be males. The amount of white on the throat varies considerably in different individuals—some, like the type, have the white patch confined to the chin ; in others it covers the greater part of the throat.

[Iris light brown; bill brownish black, mandible pinkish brown; legs yellowish flesh-colour. This bird has a sweet and powerful song, and in this respect it differs from the following species. It is very shy and difficult to obtain.—J. W.]

26. *ORTHOTOMUS FRONTALIS*, Sharpe; Sharpe, Cat. B. Brit. Mus. vii. p. 220 (1883); Steere, List Birds & Mamm. Philippines, p. 20 (1890).

The Chestnut-fronted Tailor-bird is represented in both collections.

[Iris light brown; bill black, lower mandible greyish pink; legs pinkish brown.—J. W.]

The following key to the species of *Orthotomus* found in the Philippines will, I hope, facilitate their identification:—

I. Crown and nape black.

A. Upper throat white, fore neck deep black; breast and rest of underparts bright yellow. *O. samarensis*.

B. Throat and fore neck mottled with black and white; breast greyish white, shading into olive-yellow on the sides and flanks. *O. nigriceps*.

II. Crown and nape dark grey.

C. Forehead grey like the crown; chin and throat black *O. cinereiceps*.

D. Forehead and feathers surrounding the eye rich chestnut *O. frontalis*.

III. Entire crown and forehead chestnut.

E. Tail chestnut, or chestnut margined with olive towards the base.

a. Underparts uniform whitish buff; back entirely grey. *O. ruficeps*.

b. Underparts grey, with white shaft-streaks.
 a'. Back grey *O. derbianus*.
 b'. Back green *O. chloronotus*.

F. Tail brownish, strongly margined with olive; upper back grey, shading into olive on the lower back and rump*; underparts white, only the chest-feathers being edged with grey *O. castaneiceps*.

* The amount of green varies in different individuals, as mentioned in my previous paper (Ibis, 1896, p. 549).

- | | | |
|-----|-------------------------------|---|
| 1. | <i>Orthotomus samarensis.</i> | Samar, Leite. |
| *2. | „ <i>nigriceps.</i> | Northern Mindanao. |
| 3. | „ <i>cinereiceps.</i> | Mindanao and Basilan. |
| 4. | „ <i>frontalis.</i> | Samar, Leite, Dinagat, Bohol,
Mindanao, and Basilan. |
| 5. | „ <i>ruficeps.</i> | Calamianes, Palawan, Borneo,
Sumatra, Malay Peninsula. |
| 6. | „ <i>derbianus.</i> | South and Central Luzon. |
| 7. | „ <i>chloronotus.</i> | North-east Luzon (only the
type from Engaño known). |
| 8. | „ <i>castaneiceps.</i> | Panay, Guimaras, Negros,
and Masbate. |

27. *CISTICOLA EXILIS* (Vig. & Horsf.) ; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 40 (1894) ; Grant, Ibis, 1896, p. 117.

Two males of the Red-headed Fantail-Warbler from Samar.

28. *PTILOICICHLA MINUTA*, Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 24 (1894).

This small Fluffy-backed Babbler was met with on both islands, but in Samar it appeared to be extremely rare, only a young male being procured. In Leite, however, five specimens were added. As Messrs. Bourns and Worcester have shown, this species is extremely distinct from the birds found in Mindanao and Basilan. From the former locality I have only the adult male type of *P. mindanensis* for comparison ; indeed, so far as I know, this is the only specimen that has been procured on the island. From Basilan there are four examples, including the types of *P. basilanica*. The differences pointed out by Prof. Steere are extremely slight, and I very much doubt if the Mindanao bird is really separable ; it certainly has the back

* Only the type obtained by Mr. A. H. Everett at Butuan is known. That his bird is evidently not quite adult seems certain, and we should not be altogether surprised if it turned out to be merely a younger stage of plumage of *O. samarensis*.

more uniform and devoid of dark margins to the feathers, but taken altogether the differences are small and may be due to age. The type of *P. mindanensis* was procured at Ayala, Southern Mindanao.

[This bird is always found on the ground; when moving it does not hop like the Thrush-tribe, but has a must decided walk like the Starlings. Its note is a "chic, chic, chic"; it is most shy and very difficult to obtain. Iris dark brown, tip of upper mandible black, lower light grey; feet brown.—J. W.]

29. *MACRONUS MINDANENSIS*, Steere, List Birds & Mamm. Philippines, p. 17 (1890).

There are numerous examples of the Hairy-backed Babbler from both islands. It seems curious that the birds from Mindanao should resemble those from Samar and Leite, and differ from the Basilan species (*M. striaticeps*). Nevertheless this is the case. Prof. Steere describes the type of *M. mindanensis* as having the ground-colour of the head and nape "brown," but in reality it is deep black.

[Frequents the low growths in small parties, probably families of four or five in number. Iris yellowish white; upper mandible black, lower dull whitish; feet greyish brown.—J. W.]

Key to the Species of the Genus Macronus found in the Philippines.

- I. Whole crown of the head deep black, with white shaft-stripes.
 - a. Chest-feathers mostly rufous buff..... *M. mindanensis*.
 - b. Chest-feathers white, edged with grey *M. striaticeps*.
- II. Forehead with white shaft-stripes; crown brown, like the back; underparts nearly uniform pale buff..... *M. kettlewelli*.

Macronus mindanensis. Samar, Leite, Panaon, Dinagat, and Mindanao.

„ *striaticeps*. Basilan.

„ *kettlewelli*. Sulu, Tawi Tawi, and Bongao.

30. *ZOSTERORNIS NIGROCAPITATUS* (Steere).

Mixornis nigrocapitatus, Steere, List Birds & Mamm. Philippines, p. 17 (1890).

Prof. Steere originally described this bird as a *Mixornis*, but the structure of the nasal opening, as well as the shape of the wing, clearly show that it is a species of *Zosterornis*, most nearly allied to *Z. dennistouni*, Grant, from Luzon. Young birds have the top of the head brownish and the interscapular region darker than in the adult, and both these parts have well-defined whitish shaft-stripes; the colour of the chin and throat is also paler than in the adult, while the outer webs of the primary quills are pale sandy.

[The Black-headed Babbler is common in Samar and Leite, and frequents the higher branches of the undergrowth. Iris two-coloured, having an outer ring of red and an inner one of pale yellow; bill black; legs dull lead-blue.—J. W.]

31. *ZOSTERORNIS PYGMÆUS*. (Plate VI. fig. 1.)

Zosterornis pygmæus, Grant, Bull. B. O. C. no. xl. p. xviii (1896).

Mixornis plateni, Bourns & Worcester (*nec* Blasius), Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 58 (1894).

The Pigmy Babbler is apparently a scarce bird in both islands, only one specimen being obtained in Samar, though four were collected in Leite.

There can be no doubt that this is the species Messrs. Bourns and Worcester described as *Mixornis plateni*, Blasius; but the type came from Mindanao (*cf.* J. f. O. 1890, p. 145), and appears to be considerably larger and somewhat differently coloured.

[It frequents similar localities to *Z. nigrocapitatus*, and, as in that species, the colour of the eye is remarkable, being composed of two sharply-defined colours, an outer ring of vermilion and an inner one of pale yellow. Bill black at tip, base and nostrils slate-blue; feet slate-grey.—J. W.]

The members of the genus *Zosterornis* are confined to the Philippine Islands; the only species of true *Mixornis* found within the group is *M. woodi*, from Palawan, and, as we know,

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N.K.

the fauna of this island is, on the whole, Bornean and not Philippine. The most nearly allied genera to *Zosterornis* are *Dasyrotopha*, *Chlorocharis*, and *Cyanoderma*; the two former agree in the shape of the bill and in the structure of the nasal opening, which is a long slit covered by a large membrane. The nasal opening in *Cyanoderma*, though covered over, is differently constructed. All the species of *Zosterornis* have the 5th primary slightly longer than the 4th and 6th; the 1st short, half the length of the 2nd; the tail composed of twelve feathers, the outer pair being somewhat shorter than the middle pair; and a ring of feathers round the eye, which in some species is white and very conspicuous.

I give a key to all the known species of the genus :—

I. Outer tail-feathers not tipped with white.

A. Underparts heavily streaked with black. A ring of white feathers round the eye; upper parts dull olive. Wing 2·4 inches *Z. striatus*.

B. Underparts not streaked with black.

a. Forehead and sides of head chestnut, rest of crown grey; a ring of white feathers round the eye; upper parts olive; underparts yellowish. Wing 2·5–2·8 inches . . *Z. whiteheadi*.

b. Forehead and crown brown, with pale shaft-stripes; upper parts olive-brown, with indistinct pale shafts; throat and chest grey, with white shaft-stripes; rest of underparts white. Wing 2·1 inches . . . *Z. pygmæus*.

c. Head, neck, and breast reddish-brown, with white shaft-stripes. Wing 2·2 inches . . . *Z. plateni**.

II. Outer tail-feathers widely tipped with white.

C. Forehead and crown mostly chestnut, with pale shafts; cheeks and upper parts olive-grey, with well-marked white shaft-streaks; throat washed with chestnut, rest of underparts whitish. Wing 2·7 inches *Z. capitalis*.

* I have not examined *Zosterornis plateni*, which Dr. Blasius compares with *Z. capitalis* (Tweedd.); it must also be nearly allied to *Z. pygmæus*.

- D. Forehead and crown black; otherwise much like *Z. capitalis*, but the white shaft-stripes on cheeks and back narrower, and the chestnut on throat forming a patch on each side. Wing 2·7 inches *Z. nigrocapitatus*.
- E. Forehead, crown, and throat brilliant golden yellow; otherwise much like *Z. nigrocapitatus*, but the back and underparts washed with yellowish. Wing 2·7 inches *Z. dennistouni*.

<i>Zosterornis striatus</i> .	Province of Isabella and Cape Engaño, North-east Luzon.
„ <i>whiteheadi</i> .	Benguet and Lepanto districts, North-west Luzon.
„ <i>capitalis</i> .	Dinagat, Basilan, and Mindanao.
„ <i>nigrocapitatus</i> .	Samar and Leite.
„ <i>dennistouni</i> .	Cape Engaño, North-east Luzon.
„ <i>pygmaeus</i> .	Samar and Leite.
„ <i>plateni</i> .	Mindanao.

32. *HYLOTERPE PHILIPPINENSIS*, Walden; Grant, Ibis, 1895, p. 254.

This Yellow-bellied Thick-head is represented in both collections; it is known to occur in Luzon, Samar, Leite, Siquijor, Mindanao, and Basilan.

It appears to me highly probable that *Hyloterpe mindorensis*, Bourns and Worcester, is synonymous with my *H. albiventris*. If this is so, the latter name has priority. Although the description given of the adult female does not quite agree with the specimens of *H. albiventris* from Mindoro, the discrepancies are comparatively slight.

33. *RHABDORNIS MINOR*, Grant, Bull. B. O. C. no. xl. p. xvii (1896).

Rhabdornis sp., Grant, Ibis, 1896, p. 550.

In my previous paper on the birds of Negros, the opinion was expressed that it would probably be necessary to separate the little Flower-creeper from typical *R. mystacalis*. The present collections include examples of both sexes from Samar as well as Leite, and I find that, besides the difference

in size, the male of the present species invariably has the general colour of the upper parts reddish brown, almost like those of the female. In the male of *R. mystacalis* the upper parts are always dark brownish grey.

[Iris reddish brown; bill black; feet dusky.—J. W.]

34. *RHABDORNIS INORNATUS*. (Plate VI. fig. 2.)

Rhabdornis inornatus, Grant, Bull. B. O. C. no. xl. p. xviii (1896).

It is very remarkable that a second species of Flower-creeper should occur in Samar. It is entirely distinct from the *R. mystacalis* type, the top of the head and nape being uniform dark grey, and the bill much shorter and comparatively stout. Only three males were obtained.

[Iris dark; bill and feet black.—J. W.]

The three species may be distinguished from one another by the following key:—

Key to the Species of Rhabdornis.

- I. Top of the head and nape black, heavily streaked with white; ear-coverts black.
 - A. Upper parts greyish brown: wing 3·4, culmen 1·1 inch *R. mystacalis*, ♂.
 - B. Upper parts sandy brown: wing 3·0, culmen 0·85 inch *R. minor*, ♂.
- II. Top of the head and nape brown, heavily streaked with white; ear-coverts brown.
 - C. Upper parts brown: wing 3·2, culmen 1·0 inch. *R. mystacalis*, ♀.
 - D. Upper parts reddish brown: wing 3·0, culmen 0·8 inch *R. minor*, ♀.
- III. Top of the head and nape uniform dark brownish grey; ear-coverts black: wing 3·35, culmen 0·73 inch *R. inornatus*, ♂.

The female of *R. inornatus* is not known.

35. *DENDROPHILA AENOCHLAMYS*, Sharpe; Grant, Ibis, 1896, p. 551; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 38 (1894).

Sitta aenochlamys, Steere, List Birds & Mamm. Philippines, p. 21 (1890).

The Guimaras Nuthatch was collected on both islands, Leite being a new locality.

[Iris straw-yellow; orbital skin and bill of a greenish

straw-colour, bill tipped with black; legs olive-green, with edges of scales yellowish. It is a curious fact that the Nuthatch from Palawan and Balâbac should be named *D. frontalis* like the birds from Java and India; while the representative form in Borneo, *D. corallipes*, Sharpe, is a very distinct species, having the underparts almost as bright as those of *D. aenochlamys* and the legs bright vermilion. Mr. A. H. Everett remarks (Ibis, 1895, p. 24) that the Balâbac birds have the legs dull brownish red, instead of brown, as in Palawan specimens. Indian birds have the legs pinkish brown.—J. W.]

36. *ÆTHOPYGA BELLA*, Tweeddd.; Gadow, Cat. B. Brit. Mus. ix. p. 29 (1884).

Although Messrs. Bourns and Worcester do not record this lovely little Sun-bird from Samar, they certainly obtained specimens there, for the Museum has a pair from that island in the Steere Collection which bear Mr. Worcester's label.

Mr. Whitehead also collected several examples, but the species was not met with in Leite, though it doubtless occurs there. "Surigao," where Mr. A. H. Everett obtained the type *Æ. bella*, is in the extreme north-east of Mindanao, but has been confounded in the 'Catalogue of Birds' (*vide supra*) with "Siargao," an island off the coast.

37. *EUDREPANIS PULCHERRIMA* (Sharpe).

Æthopyga pulcherrima, Sharpe; Gadow, Cat. B. Brit. Mus. ix. p. 31 (1884); Steere, List Birds & Mamm. Philippines, p. 22 (1890).

This very beautiful Sun-bird is represented in both collections. Mr. Whitehead has kindly presented to the Natural History Museum a beautiful domed nest of this species found in Samar on the 26th June, together with a pair of birds. These have been mounted by Mr. Cullingford, while the fern (*Angiopteris erecta*) to which the nest is suspended has been skilfully reproduced by Miss Emmett. This group is now to be seen in the Bird Gallery. The eggs of this species are rather remarkable, and will be described in a future paper.

38. *CINNYRIS SPERATA* (Linn.); Steere, List Birds & Mamm. Philippines, p. 22 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 38 (1894); Grant, Ibis, 1896, p. 468.

There are examples of the widely-distributed Red-breasted Philippine Sun-bird in both collections. The species is known to occur in the following islands of the group:—Luzon (south), Marinduque, Mindoro, Tablas, Sibuyan, Masbate, Samar, Leite, Cebu, Siquijor, Negros, Guimaras, Panay, Calamianes, and Palawan.

39. *CINNYRIS JUGULARIS* (Linn.); Grant, Ibis, 1896, p. 551.

The Philippine Yellow-breasted Sun-bird is represented by a male from Leite. It has already been recorded from almost every island in the group.

40. *ARACHNOTHERA PHILIPPINENSIS*.

Philemon philippinensis, Steere, List Birds & Mamm. Philippines, p. 21 (1890).

The Naked-cheeked Spider-hunter is a remarkable form met with in both Samar and Leite, the latter locality being new. Its nearest ally is no doubt *A. chrysogenys*, found in Malacca, Sumatra, Java, and Borneo. In the 'Catalogue of Birds in the British Museum' (ix. p. 101), the key to the species leads one to suppose that the allied species is *A. flaviventris*, but the names *chrysogenys* and *flaviventris* have been transposed. In the Samar bird, the naked parts of the face are much more extended than in *A. chrysogenys*, the forehead, cheeks, ear-coverts, and region of gape being quite naked; the yellow patches on the sides of the throat characteristic of the latter species are absent, and the wings are washed with olive-yellow. In both species, however, the culmen is strongly ridged. Prof. Steere's type is an adult female; we have examples of both sexes, and the plumage is identical.

[Iris and bill black; feet pinkish brown; gape brilliant white, bare skin on face pinkish yellow.—J. W.]

41. ARACHNOTHERA FLAMMIFERA, Tweedd.; Gadow, Cat. B. Brit. Mus. ix. p. 104 (1884); Steere, List Birds & Mamm. Philippines, p. 22 (1890).

Although Dr. Gadow regards the Orange-tufted Spider-hunter as merely a smaller race of *A. longirostris*, the birds appear to me to be perfectly distinct. *A. flammifera* has the cheeks uniform grey, the throat and breast of a much more pronounced grey, this colour extending right over the belly. *A. longirostris* has a well-defined blackish-grey moustachial streak, and the breast and rest of underparts are yellow. The Philippine species has the tufts on the sides of the breast brilliant orange, while in *A. longirostris* they are yellowish orange. In addition to these differences, we may call attention to the much shorter bill of the Philippine bird.

[Iris red-brown; upper mandible black, lower mandible and feet greyish blue.—J. W.]

42. ANTHOTHREPTES GRISEIGULARIS, Tweedd.; Grant, Ibis, 1896, p. 120.

I have the Grey-throated Sun-bird from Samar.

43. ZOSTEROPS BASILANICA, Steere, List Birds & Mamm. Philippines, p. 21 (1890); Grant, Ibis, 1896, p. 552.

The Basilan Silver-eye is represented in both collections. Remarks on this and allied species will be found in my previous paper.

Unlike the allied species (*Z. siquijorensis*) from Negros, this bird is found in the low country from 1000 to 2000 feet.

44. DICEUM RUBRIVENTER, Less.; Grant, Ibis, 1896, p. 120; Steere, List Birds & Mamm. Philippines, p. 22 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 38 (1894).

The Red-bellied Flower-pecker is in both collections. Leite appears to be a new locality.

45. DICEUM LUZONIENSE, Grant, Ibis, 1895, p. 453.

I have a single adult male from Samar which, if not identical with the Red-breasted Flower-pecker from Luzon, is very closely allied. It appears to differ in the following

points :—The upper parts are slightly washed with steel-blue, the red of the breast appears to be of a rather more orange tint and restricted to the breast, and the wing is decidedly shorter, 1·88 in. against 2·0 to 2·2 in. in typical *D. luzoniense*. Though this bird is altogether smaller and is somewhat different, it is rather injured by shot, and, being unique, I hardly like to separate it on the evidence before me.

46. *DICÆUM PYGMÆUM* (Kittl.) ; Grant, Ibis, 1894, p. 515, 1895, p. 453.

There are examples of the Pigmy Flower-pecker from Leite. The species has been recorded from nearly every island in the group, except Mindanao and the islands to the south.

47. *DICÆUM CINEREIGULARE*, Tweedd. ; Sharpe, Cat. B. Brit. Mus. x. p. 40 (1885) ; Steere, List Birds & Mamm. Philippines, p. 22 (1890) ; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 57 (1894).

The Mindanao Orange-breasted Flower-pecker was met with in both Samar and Leite, and its nests were found on both these islands. Mr. Whitehead has kindly presented the parent birds and one of their small bag-shaped nests suspended from the branch of a tree (*Salacia roxburghi*) to the Natural History Museum. The foliage has been beautifully reproduced by Miss Emett, and the group is now exhibited in the Bird Gallery.

48. *DICÆUM EVERETTI*, Tweedd. ; Sharpe, Cat. B. Brit. Mus. x. p. 47 (1885) ; Steere, List Birds & Mamm. Philippines, p. 22 (1890).

Birds from Samar and Leite are undoubtedly typical examples of Everett's Flower-pecker. Prof. Steere identified his specimens from Samar as doubtfully identical with *D. everetti*, but these were not fully adult.

[Iris light brown ; bill black ; feet dark brown.—J. W.]

49. *PRIONOCHILUS OLIVACEUS*, Tweedd. ; Sharpe, Cat. B. Brit. Mus. x. p. 75 (1885).

Prionochilus samarensis, Steere, List Birds & Mamm. Philippines, p. 22 (1890).

The Olive Thick-billed Flower-pecker seems to be a scarce

bird. I have a male from Leite, and Mr. Whitehead tells me that though two examples were lost in the first collection from Samar, the bird was not seen during his second visit to that island. I cannot quite agree with Prof. Steere in regarding the birds from Samar and Leite as distinct from those found in Dinagat and Basilan; for, even if constant, the differences he points out are extremely slight.

50. *PRIONOCHILUS INEXPECTATUS*, Hartert; Grant, Ibis, 1896, p. 553.

This recently-described species has now been met with in Samar and Leite. It seems more than probable that it is not really distinct from *P. bicolor*, Bourns & Worcester; but, having no typical specimens of the latter form from Mindanao, I cannot be certain.

51. *ARTAMUS LEUCOGASTER* (Wagl.); Grant, Ibis, 1896, p. 554.

There is a specimen of the White-bellied Wood-Swallow from Samar.

52. *SARCOPS CALVUS* (Linn.); Grant, Ibis, 1896, p. 554.

The Bald-headed Grackle is represented in Samar by the black-backed form.

53. *UROLONCHA EVERETTI* (Tweedd.), Grant, Ibis, 1896, p. 555.

Everett's Striped Weaver was obtained in both Samar and Leite.

54. *PITTA ERYTHROGASTRA*, Temm.; Grant, Ibis, 1896, p. 555.

Erythropitta erythrogastra and *E. propinqua* (sic), Steere, List Birds & Mamm. Philippines, p. 17 (1890).

The Red-bellied Pitta has already been recorded from Samar by Steere under the name of *E. propinqua*.

55. *PITTA ATRICAPILLA*, Less.; Grant, Ibis, 1896, p. 555.

This is the first time that the Philippine Black-headed Pitta has been recorded from Samar. Only one female was preserved, and this a breeding bird, its eggs being obtained.

In the adult male all the primaries, including the two outermost, are white, merely tipped with black. In the adult females the white, as a rule, does not extend on to the outer webs of the first two primaries, and in the remaining pairs the black tips are very much wider than in the male; thus the former has a white wing narrowly tipped with black, the latter a black wing with a wide white band across the middle. In young males the wing resembles that of the female. This important sexual difference is not noticed in the British Museum 'Catalogue of Birds' (*cf.* vol. xiv. p. 438). The male is said to have the wing 4.5 in., but the largest male specimen in our now extensive series of this species measures only 4.25 in., and in the great majority of males the wing never exceeds 4.1 in. The wing of the female is generally rather shorter than that of the male. In the Samar bird it measures 3.8 in.

56. *PITTA STEERII* (Sharpe); Selater, Cat. B. Brit. Mus. xiv. p. 442 (1888); Elliot, Monograph Pittidæ, pl. xxxvii. (1894).

Steere's Ant-Thrush is one of the rarest as well as one of the most beautiful species of the genus. Previously to Mr. Whitehead's visit to Samar the British Museum possessed only four specimens, and two of these were recently acquired with the Steere Collection. The bird was not met with in Leite, nor did there seem to be any ground in the north of this island suitable to its habits. On Samar, however, a good series of specimens was obtained.

The plumage of some of the young birds, being in an interesting stage of transition, is worth describing. The youngest example, a male, has the upper parts and wings like those of the adult, but the breast, sides, and flanks are of a dirty greyish olive, only one or two of the silver-blue feathers being visible, and the entire middle of the breast and belly are pale scarlet. A rather older bird is similar to the above, but down the sides and middle of the breast are three lines of pale blue feathers. In both specimens these are being attained by moult. In the middle of the breast a

tuft of the black adult feathers is making its appearance amongst the red, and some of the latter appear to be turning black without a moult.

A third young male in the British Museum Collection, figured in Mr. D. G. Elliot's Monograph, is incorrectly coloured, for the bird is represented as having the middle of the breast and belly black, edged externally with pale red. This, however, is not the case, the middle of the breast and belly being uniform pale red.

[This beautiful *Pitta* doubtless finds its nearest ally in *Pitta maxima* from Gilolo, which, according to Dr. A. R. Wallace, frequents a hummocky limestone district. It was on ground of this kind that *P. steerii* was met with in Samar. *P. maxima*, although apparently a white-breasted bird, has beautiful green reflections if held in an oblique sunlight. Iris and bill black; feet light brown, pinkish at joint of tarsus.—J. W.]

57. *SARCOPHANOPS SAMARENSIS*, Steere, List Birds & Mamm. Philippines, p. 23 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 54 (1894).

There are examples of the Samar Broad-bill in both collections, the island of Leite being a new locality.

[*Adult*. Iris brilliant metallic green, with a bronze ring round the pupil; eye-wattle bright Cambridge blue, with darker blue wrinkles; bill greyish slate-blue, whitish on edges; legs Cambridge blue, back of legs darker, nails whitish.

Immature. Iris bright blue, orbital skin lemon-yellow; bill black, white towards the base; feet olive-yellow.—J. W.]

58. *CHÆTURA PICINA*, Tweedd.; Hartert, Cat. B. Brit. Mus. xvi. p. 487 (1892).

Since 1878, when the female type of this rare bird was procured by Mr. A. H. Everett at Zamboanga, the White-throated Spine-tailed Swift had not again been met with till Mr. Whitehead shot three in Leite. Two of these are males and differ in no wise from the female either in plumage or

size. The male type measures—total length 4·3 inches, wing 6·6, tail 1·2.

[Iris dark brown; bill black; legs bare; feet dull lead-grey.—J. W.]

59. COLLOCALIA TROGLODYTES, G. R. Gray; Hartert, Cat. B. Brit. Mus. xvi. p. 507 (1892); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 35 (1894).

There is a single male of the White-rumped Swiftlet from Leite. This is the first record of its occurrence in that island, though it is known to occur in Luzon, Mindoro, Marinduque, Sibuyan, Romblon, Masbate, Samar, Mindanao, Siquijor, Cebu, Negros, Guimaras, Panay, and Palawan.

60. EURYSTOMUS ORIENTALIS (Linn.); Grant, Ibis, 1896, p. 555.

The Broad-billed Roller is represented in both collections.

61. MEROPS BICOLOR, Bodd.; Grant, Ibis, 1895, p. 261.

There is an example of this Bee-eater from Samar.

62. CEYX SAMARENSIS, Steere, List Birds & Mamm. Philippines, p. 10 (1890).

Ceyx melanura, Sharpe, Cat. B. Brit. Mus. xvii. p. 180 (1892) [part.].

In spite of what has been said to the contrary, I consider that the Samar Three-toed Kingfisher is distinct from *C. melanura* from Luzon. Not only are the measurements of the wing and bill in the Samar bird considerably longer, but the spots on the wing-coverts are much larger and of a more intense blue. Dr. Sharpe, *l. c.*, considers that *C. platense* is also synonymous with *C. melanura*; but the wing-coverts are very differently coloured, as Dr. Blasius states in his description. *C. platense* is no doubt synonymous with *C. mindanensis* and *C. basilanica*, Steere. The name *C. platense* appears in the April part of the J. f. O. for 1890, while Steere's names, published in his 'List of the Birds & Mammals of the Philippines,' bear the date of "14th July, 1890." It seems, however, pretty certain that Heft ii. of the J. f. O., 1890, though bearing the date of April on the cover, was not

issued till fully six months later, for the copy in the British Museum was not received until the 19th of November, 1890; under these circumstances Prof. Steere's name *Ceyx mindanensis* has priority.

Messrs. Bourus and Worcester have united *C. basilanica*, Steere, with *C. mindanensis*, and state that with a very large series of specimens from Mindanao and Basilan they are unable to detect the slightest difference between the birds from the two islands. We have only the types and the pair of birds from Basilan to judge from, and these certainly appear to belong to different species, for the Basilan birds have *no* trace of black in front of the white spot on the side of the neck, while in Mindanao birds the black is strongly marked. Possibly this character is variable; in *C. dillwynii* it certainly is, for the black in front of the yellowish-white neck-spot is absent or present in birds from the same locality.

Mr. Whitehead did not meet with *C. samarensis* in Leite.

<i>Ceyx melanura</i> (Luzon). in.		<i>Ceyx samarensis</i> (Samar). in.	
6 adults	Culmen 1·4	2 adults	Culmen 1·65-1·7
measure	Wing 2·1	measure	Wing 2·35-2·4
In adults and young alike the spots on the wing-coverts smaller and dull blue.		In adults and young alike the spots on the wing-coverts larger and bright French blue.	

[Iris black; bill and feet vermilion.—J. W.]

63. *ALCYONE FLUMINICOLA* (Steere).

Ceyx fluminicola, Steere, List Birds & Mamm. Philippines, p. 10 (1890); Sharpe, Cat. B. Brit. Mus. xvii. p. 187 (1892).

This species should, in our opinion, be placed with the genus *Alcyone*; for its habits, like those of *A. cyanipectus* and *A. nigristrostris*, are quite different from those of *Ceyx*. The latter are found in the forests far from water, and feed chiefly on insects. The black-billed species of *Alcyone* mentioned above are exclusively met with in the neighbourhood of rivers and streams, and their food consists of fish.

[Iris and bill black; feet coral-red.—J. W.]

64. *HALCYON GULARIS*, Kuhl; Grant, Ibis, 1896, p. 556. The White-throated Kingfisher from Samar.

65. *HALCYON CHLORIS* (Bodd.) ; Grant, Ibis, 1896, p. 556.

The White-collared Kingfisher from Samar. The ear-coverts are black mixed with green, and united by a black band forming a wide border to the crown.

66. *HYDROCORAX SEMIGALEATUS* (Tweedd.) ; Grant, Cat. B. Brit. Mus. xvii. p. 360 (1892).

The Greater Samar Hornbill is represented in both collections.

[Iris straw-colour; basal half of bill lake-red, terminal half white; feet dull brick-red.—J. W.]

67. *PENELOPIDES SAMARENSIS*, Steere ; Grant, Cat. B. Brit. Mus. xvii. p. 376 (1892).

The Lesser Samar Hornbill was obtained in Samar.

68. *HARPACTES ARDENS* (Temm.) ; Grant, Ibis, 1896, p. 123.

The Philippine Trogon was met with in both islands, Leite being a new locality.

69. *IYNGIPICUS LEYTENSIS*, Steere ; Grant, Ibis, 1896, p. 472.

Yungipicus leytensis, Steere, List Birds & Mamm. Philippines, p. 9 (1890).

The Leite Pigmy Woodpecker appears to be fairly common in both islands. In the previous paper on the birds of Mindoro, quoted above, a key to the Philippine species of *Iyngipicus* will be found, the present birds coming under sections B and c. The latter would, however, be clearer if it read "ground-colour of underparts pale buff," &c.

70. *CHRYSOCOLAPTES RUFOPUNCTATUS*, Hargitt, Cat. B. Brit. Mus. xviii. p. 457, pl. xii. (1890) ; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 53 (1894).

Chrysocolaptes samarensis, Steere, List Birds & Mamm. Philippines, p. 8 (1890).

This Crimson-backed Woodpecker is fairly common in Samar, but only one example was obtained in Leite. We have compared Hargitt's female type from Panaon with Steere's types from Samar and fully agree with Messrs. Bourns

and Worcester that the birds belong to the same species. An immature female has the spots on the crown *pale buff*, the ground-colour of the underparts dirty white, and the black stripes on the chin and throat merely indicated.

[Iris red; bill dusky black; feet brownish olive.—J. W.]

71. *MICROSTICTUS FULIGINOSUS*, Tweedd.; Hargitt, Cat. B. Brit. Mus. xviii. p. 492 (1890).

Mülleripicus fuliginosus (Tweedd.) ; Steere, List Birds & Mamm. Philippines, p. 8 (1890).

The Mindanao Black Woodpecker appears to be more plentiful in Leite than it is in Samar, for Mr. Whitehead obtained only one specimen during his stay in the latter island.

Although there are two females of this species in the Steere Collection, this sex does not appear to have been described :—

Adult female. Closely resembles the female of *M. funebris*, but may be distinguished by the general colour of the plumage being greyer; the ground-colour of the chin and throat grey like the cheeks, and the white dots distinctly larger. In the female of *M. funebris* the chin and throat are brownish grey, and contrast with the blackish-grey cheeks.

Total length 10·6 inches, culmen 1·45, wing 5·8, tail 4·1, tarsus 1·1.

72. *THRIPONAX PECTORALIS*, Tweedd.; Hargitt, Cat. B. Brit. Mus. xviii. p. 500, pl. xiii. (1890); Steere, List Birds & Mamm. Philippines, p. 8 (1890); Grant, Ibis, 1896, p. 558.

This Great Black-backed Woodpecker was met with in both islands, its black buff-margined breast-feathers making it easily distinguishable from its allies. In young males, with merely an indication of the malar stripe, the feathers of the breast are black with narrow whitish margins. By referring to the previous paper quoted above, it will be seen that I referred a specimen from Negros to this species which had been included in *T. javensis* by Hargitt. Having gone again over the same ground, I think it is best to follow Hargitt and include Negros birds with *T. javensis*. The fact is that

birds from Negros and Basilan appear to differ from typical *T. javensis* and to approach *T. pectoralis*, having most of the breast-feathers narrowly margined with buff, but on the whole they are much nearer *T. javensis*.

[Iris straw-colour; upper mandible greyish black, lower slaty blue; feet dull slate-blue.—J. W.]

73. *XANTHOLEMA HEMATOCEPHALA* (P. L. S. Müller); Grant, Ibis, 1896, p. 474.

The Crimson-gorgeted Barbet was obtained in both collections, Samar being a new locality.

74. *SURNICULUS VELUTINUS*, Sharpe; Grant, Ibis, 1896, p. 559.

This Little Black Cuckoo was met with in Samar.

75. *EUDYNAMIS MINDANENSIS* (Linn.); Grant, Ibis, 1896, p. 474.

Eudynamis orientalis, Whitehead, Ibis, 1890, p. 409.

The Philippine Koel was found in Leite, where an immature pair were obtained. The female is in an interesting stage of plumage, just beginning to change out of the black into the spotted dress of the adult female.

Capt. Shelley (see Cat. B. Brit. Mus. xix. p. 317) evidently doubts the correctness of Mr. Whitehead's interesting account of the changes in this species (Ibis, 1890, pp. 409-411); but the evidence appears to show conclusively that the first plumage of the immature female is black, like that of the male adult.

76. *CENTROPUS VIRIDIS* (Scop.); Grant, Ibis, 1895, p. 466.

A male was collected at Samar. The name of this species was accidentally omitted from our last paper on the birds of Negros.

77. *CENTROPUS MELANOPS*, Less.; Shelley, Cat. B. Brit. Mus. xix. p. 365 (1891).

Pyrrhocentor melanops, Steere, List Birds & Mamm. Philippines, p. 12 (1890).

The Black-masked Coucal is an extremely handsome Cuckoo, and represented in both collections. This species

has now been found in Samar, Leite, Nipah, Mindanao, and Basilan.

[Iris lake-red ; bill and feet black.—J. W.]

78. *CACATUA HÆMATUROPYGIA* (P. L. S. Müll.) ; Grant, Ibis, 1896, p. 560.

A specimen of the Philippine Cockatoo from Samar.

79. *PRIONITURUS DISCURUS* (Vieill.) ; Grant, Ibis, 1896, p. 560.

Samar and Leite specimens of the Philippine Racquet-tailed Parrot resemble the more northern forms in having the blue crown paler, less extended, and shading into the yellow-green forehead and nape.

80. *TANYGNATHUS LUCONENSIS* (Linn.) ; Grant, Ibis, 1896, p. 561.

The various insular forms of this species have already been discussed in my previous paper quoted above. Though the Blue-crowned Parraquet is represented in both collections, neither of the birds is fully adult, but they appear to be most like birds from Cebu.

It is the first time that this species has been recorded from Samar and Leite.

[Iris straw-white, a ring of brown round the pupil ; bill rosy red, lower mandible pale pinkish red ; feet olive-brown.—J. W.]

81. *BOLBOPSITTACUS INTERMEDIUS*, Salvad. Cat. B. Brit. Mus. xx. p. 505, pl. xiii. (1891) ; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, pp. 36 & 50 (1894).

Mr. Whitehead obtained a good series of the Samar Collared Parraquet in both islands, Leite being a new locality. The type specimen, a male, has the blue parts of the face inclining to purplish and rather more richly coloured than in any of the specimens now before me ; still there can be no doubt that the Samar and Leite birds belong to this species, which is very close to *B. lunulatus*, but the latter has the collar and face of a verditer-blue.

82. *LORICULUS WORCESTERI*, Steere, List Birds & Mamm. Philippines, p. 6 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 50 (1894).

With a good series of the Samar Lorikeet before me, I agree with Messrs. Bourns and Worcester that this species is distinct from *L. apicalis*, with which it was united by Count Salvadori. The distinctive characters were correctly given in Prof. Steere's original description.

83. *OSMOTRERON AXILLARIS* (G. R. Gray, MS., *fide* Bonap.); Grant, Ibis, 1896, p. 553.

A female of the Philippine Green Pigeon was collected at Samar for the first time.

84. *PTILOPUS OCCIPITALIS*, G. R. Gray; Grant, Ibis, 1896, p. 564.

A male of the Yellow-breasted Fruit-Pigeon from Samar.

85. *PTILOPUS LECLANCHERI* (Bonap.); Grant, Ibis, 1896, p. 124.

The Black-throated Fruit-Pigeon is recorded from Samar for the first time.

86. *PHABOTRERON AMETHYSTINA* (Bonap.); Salvad. Cat. B. Brit. Mus. xxi. p. 66 (1893); Grant, Ibis, 1896, p. 563.

The Amethyst Brown Pigeon belongs to the large-billed group, which has been already discussed in our paper quoted above. Several examples from Samar.

[Iris light brown; bill black; bare skin round eye dull greenish white; feet coral-pink.—J. W.]

87. *PHABOTRERON BREVIROSTRIS*, Tweedd.; Salvad. Cat. B. Brit. Mus. xxi. p. 69 (1893); Grant, Ibis, 1896, p. 563.

This Brown Pigeon belongs to the small-billed group mentioned in the previous paper. It was obtained in both islands.

88. *CARPOPHAGA CHALYBURA*, Bonap.; Grant, Ibis, 1896, p. 564.

Bonaparte's Philippine Fruit-Pigeon is represented in both collections.

89. *CARPOPHAGA POLIOCEPHALA*, G. R. Gray ; Grant, Ibis, 1896, p. 564.

This splendid Green Fruit-Pigeon has been sent from both islands. This is the first time it has been recorded from Leite.

90. *MACROPYGIA TENUIROSTRIS*, G. R. Gray ; Grant, Ibis, 1896, p. 565.

A male of the Slender-billed Cuckoo-Dove from Leite ; the first recorded from that island.

91. *TURTUR DUSSUMIERI* (Temm.) ; Grant, Ibis, 1895, p. 471.

A specimen of Dussumier's Turtle-Dove from Samar, which is a new locality, though Mr. A. H. Everett met with it in South Leite.

92. *PHLOGENAS CRINIGERA* (Reichenb.) ; Salvad. Cat. B. Brit. Mus. xxi. p. 587 (1893) ; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 30 (1894).

The Mindanao Blood-breasted Ground-Pigeon was obtained in Leite. It had previously been recorded from Basilan, Mindanao, and Samar. Sulu Island ?

[Iris dull violet-blue ; bill dull grey, darker at tip ; legs pale pink, with deep lake scales.—J. W.]

93. *GORSACHIUS MELANOLOPHUS* (Raffl.) ; Steere, List Birds & Mamm. Philippines, p. 27 (1890) ; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. 1, p. 32 (1894).

An immature specimen of the Malayan Tiger-Bittern from Samar completes the list.

XIX.—*Description of a new Bird of Paradise from
British New Guinea.* By C. W. DE VIS.

(Plate VII.)

THE bird, of which I forward a specimen, appears to belong to a new genus of Paradiseidæ, which I propose to name (by request), after Lady Macgregor :—



MACGREGORIA, gen. nov.

Bill shorter than head behind the nostrils, higher than broad ; culmen subacute, curved gently on basal, more rapidly on apical moiety ; edge of maxilla with a shallow subapical notch ; nostril narrow, elongate, half hidden by nasal plumes ; fore part of head with more or less erect plumes ; a large caruncle on the postero-lateral part of the head. Wing short, rounded ; primaries longer than secondaries and first primary longer than the second by equal lengths ; wing-tip rounded, formed by the 4th, 5th, 6th, and 7th quills. Tail moderate, rounded. Tarsus moderate, stout, scutellation entire fore and aft. Feet strong ; hallux equal in length to middle toe and claw.

MACGREGORIA PULCHRA, sp. nov. (Plate VII.)

Frontal, sincipital, and loreal plumes forming a compact brush, the frontals inclining forward, the sincipitals backward ; a caruncle extending from the fore end of the orbit above and below over the cheek, side of the neck, ears, and upper part of the side of the head. General colour black, caruncle yellow (orange-yellow in life) ; primaries rufous yellow, paler on the outer edges of the outer quills, black on the apical fifth. Iris dull red ; feet grey. Total length 325 mm. ; culmen 21·5 ; wing 187 ; tarsus 60·5 ; hind toe 32 ; tail 167.

Hab. Mt. Scratchley, British New Guinea, at 21,000 feet altitude.

Obs. Three examples of this bird, all (presumably) males, were obtained by Sir W. Macgregor, in May 1896, during his journey across British New Guinea from Mambare to the Vanapa River. Mr. A. Giulianetti, his Excellency's collector, notes that "the species is pretty common all over the Scratchley Range." He saw it up to about 12,600 feet of elevation.

[In a communication made by Prof. Giglioli to the 'Bollettino della Società Geografica Italiana,' fasc. 1^o, 1897, it seems that this bird has been mentioned by Sir W. Macgregor, in a letter to Prof. Giglioli, as intended to be

named "*Maria macgregoria*." Unfortunately the generic term "*Maria*" has been already employed in zoology (Bigot, *Rev. et Mag. de Zool.* 1859, p. 311 : Diptera), so that we do not alter Mr. De Vis's name, which is stated to be given at Sir W. Macgregor's "request."—EDD.]

XX.—*Bulletin of the British Ornithologists' Club.*

Nos. XL.—XLII.

No. XL. (December 30th, 1896.)

THE thirty-ninth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 16th of December, 1896.

Chairman : P. L. SCLATER, F.R.S.

Members present :—BOYD ALEXANDER, G. E. H. BARRETT-HAMILTON, E. BIDWELL, J. L. BONHOTE, P. CROWLEY, Dr. F. D. DREWITT, H. J. ELWES, J. GERRARD, W. GRAHAM, W. R. OGILVIE GRANT, Col. P. W. L'ESTRANGE, E. G. B. MEADE-WALDO, R. NESHAM, C. E. PEARSON, H. J. PEARSON, FRANK PENROSE, H. SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), Rev. H. H. SLATER, E. C. TAYLOR, Major HORACE TERRY, N. F. TICEHURST, W. F. URWICK, L. A. WILLIAMS, C. A. WRIGHT, JOHN YOUNG.

Visitors : W. P. CRAKE, F. CURTIS, Hon. ALFRED HOOD, F. E. MUGFORD, F. TURNER.

The Hon. WALTER ROTHSCHILD sent the description of a new Bird of Paradise :—

LOBOPARADISEA, gen. n.

The type of this new genus differs from all others in having two wattles, which entirely cover the basal half of the beak, except a narrow ridge on the culmen. Size small; bill very broad at base, and short; feathers of underparts and rump decomposed and with a strong satiny gloss. No lengthened ornamental plumes. Tip of tail rounded.

LOBOPARADISEA SERICEA, sp. n.

Head brown ; hind neck and back rufous-chestnut, with a slight olive tinge ; rump bright yellow, with a beautiful silky sheen. Wings and upper wing-coverts ruddy chestnut ; primaries broadly tipped with black and having the shafts brick-red ; tail and upper tail-coverts reddish chestnut. Underside bright yellow and most beautifully silky. Thighs olive-brown. Under wing-coverts and underside of primaries brownish cinnamon. Bill with two large wattles reaching halfway down from the base, dull blue with yellow tips. Wing 91 millim., tail 58, bill 21.

Bought from natives at Koeroedoe, Dutch New Guinea.

Mr. W. R. OGILVIE GRANT exhibited specimens of several interesting birds from the island of Samar, amongst which the following appeared to be new to science:—

PITHECOPHAGA, gen. n.

Probably most closely allied to *Harpyhaliaëtus*, of South America.

Bill very deep and much compressed ; the ridge of the culmen much curved, forming a perfect segment of a circle ; nasal opening a vertical slit at the margin of the cere ; lores and fore part of the face and cheeks covered with bristles only ; a full occipital crest of long lanceolate feathers ; legs and feet very powerful. Tarsi mostly naked, with a row of large scutes down the front ; sides and back reticulate, hexagonal scales on the planta very large, and terminating in three large scutes above the base of the hallux ; soles of the feet covered with rough papillæ ; claws very strong and curved. Wings comparatively short and rounded, the primaries being very little longer than the secondaries, the first primary-quill much the shortest, and the fifth probably the longest (tip broken). Tail very long, composed of twelve feathers and slightly wedge-shaped, the middle pair being about an inch longer than the outer pair.

1. PITHECOPHAGA JEFFERYI, sp. n.

Top of the head pale whitish buff with dark middles to the

feathers, which are rather narrow and pointed, especially those on the occiput, which form a long full crest. General colour above rich brown, most of the feathers with paler margins, especially the quill-feathers and wing-coverts; tail-feathers dark brown, the two median pairs with wide dark bands; shafts of quills and tail-feathers creamy white; under-parts uniform creamy white, the thighs and long flank-feathers with reddish-brown shaft-stripes.

Total length about 33·0 inches; bill, greatest depth measured from base of cere to ridge of culmen 1·5, from base of cere to tip 1·5; wing 20·5; tail 15·0; tarsus 4·65; middle toe without claw 2·7, claw (measured in a straight line from base to tip) 1·45; hind toe without claw 1·8, claw 2·0.

"Iris dull creamy brown, with an outer ring of brownish red, the two colours melting into one another and not sharply defined; face and base of bill dull french blue, tip of bill black; legs and feet dull yellow; claws black." (*J. Whitehead.*)

2. RHABDORNIS MINOR, sp. n.

Adult male. Differs from the male of *R. mystacalis* in having the general colour of the upper parts *reddish brown*, almost like those of the female, instead of dark greyish brown, and the bill much shorter. "Iris reddish brown; bill black; feet dusky" (*J. Whitehead.*)

Total length 5·5 inches, culmen 0·82, wing 3·1, tail 1·6, tarsus 0·72.

Adult female. Similar to the female of *R. mystacalis*, but smaller and with the culmen much shorter. From the male of *R. minor* it is only distinguished by the ear-coverts being brown instead of black.

3. RHABDORNIS INORNATUS, sp. n.

Adult male. Easily distinguished from *R. mystacalis* and *R. minor* by having the bill altogether stouter and stronger, the top of the head and nape uniform dull greyish brown; mantle brown, with whitish shafts only to the feathers; the lesser and median wing-coverts with well-marked white shaft-stripes; chin, throat, and fore neck greyish white; the

margins of the sides and flank-feathers much narrower and browner. "Iris dark brown; bill and feet black" (*J. Whitehead*).

Total length 6·2 inches, culmen 0·74, wing 3·2, tail 2·0, tarsus 0·8.

4. *ZOSTERORNIS PYGMÆUS*, sp. n.

Adult male and female. General colour above brownish olive, brownest on the crown, each feather of which has a narrow whitish shaft-stripe; lores whitish; feathers above and below the eye blackish with white shafts; chin whitish; throat, fore neck, and chest grey, with white middles to the feathers, most marked on the throat; breast and belly white, shading into greyish on the sides, flanks, and under tail-coverts. "Iris bicoloured, outer ring red, inner pale yellow; bill slate-blue, black at tip; feet slate-grey" (*J. Whitehead*).

Total length 4·0 inches, culmen 0·5, wing 2·1, tail 1·55, tarsus 0·65.

This is much the smallest of the five species of *Zosterornis* now known.

Mr. F. PENROSE called the attention of the Club to some letters which had recently appeared in the 'Field.'

On November 28, 1896, the following paragraph occurred amongst the "Notes and Queries on Natural History":—"Swallows wintering in England.—A pair of Swallows remained the whole of the last mild winter at the farm of Mr. T. Whipp, Elton Wold, East Yorkshire, making an old large barn their headquarters. They could be seen out every fine day. The birds remained till joined by their friends from the south in the spring. On inquiry, I find none have been seen for some time this season.—G. C. SWAILES (Beverley)."

And the following paragraph in the next week's issue, December 5th:—

"Two Swallows hibernated last winter in a cowhouse at Healey Vicarage, near Masham, and the birds were frequently handled by members of the vicar's family. This is the only instance of such an occurrence that I have heard of in this locality.—JAMES CARTER (Masham, Yorks)."

Mr. Penrose thought that these two statements, and particularly the second, were of very great interest, so he had written to the Rev. T. Powell, Vicar of Healey, to ask him for further particulars, and had received the following reply :—

“I have pleasure in giving you the facts with regard to the hibernating of the two Swallows here last winter (1895-6). They were members of a very late brood of four hatched in a nest under the slates inside our cow-house. I may here mention that a pair of Swallows nest every year in the same place. The two Swallows in question were seen flying about by members of my family long after the other Swallows had disappeared. They finally lodged above the lintel of the cowhouse door, squeezing themselves into a small hole in the stonework, and thus escaping the draught. When I saw them the tail was the only part of their bodies that was at all conspicuous. My eldest son, then 16 years old, had them both in his hands at the beginning of last Christmas holidays, soon after his return from Bradford Grammar School. They were in a drowsy condition, and did not attempt to fly when he gave them the chance. On very fine days, as he informs me, he saw them flying about for about two hours in the middle of the day from 11 to 1 o'clock.

“One of the Swallows died some time in spring, the other left its winter-quarters shortly before the return of the Swallows (in April) and was a conspicuous object among its fellows during spring and early summer through having lost one of the forks of its tail. It mated with another Swallow, and they attempted to nest in the pigsty, which joins the cowhouse, but this came to nothing—the lowness of the roof of the pigsty most likely causing them to desist from the attempt. It is hardly necessary to add that last winter hereabouts, in common with the rest of England, was very mild.”

Mr. CHARLES E. PEARSON exhibited an interesting clutch of the eggs of the Common Whitethroat (*Sylvia cinerea*), which showed a remarkable pink tinge. These eggs had been obtained by Mr. F. B. Whitlock near Nottingham.

Mr. SCLATER read some extracts from a letter received from Mr. Graham Kerr, dated Villa Concepcion, Paraguay, Oct. 17th, 1896 (*cf.* Bull. B. O. C. no. xxxviii. p. viii; *suprà*, p. 115). Mr. Kerr had arrived there from Asuncion about three weeks before, and was then about to leave for a Missionary station in the Gran Chaco, where *Lepidosirens* (the primary object of the expedition) were said to be abundant. A small steamer would convey him and his companion (Mr. Budgett) 12 leagues up the Paraguay to Carayá Vuelta, whence they would strike across the Chaco (some six days' journey) westward to their destination. Of birds, Mr. Kerr had observed in the neighbourhood of Concepcion (all quite common) *Geothlypis velata*, *Tachycineta leucorrhoa*, *Tanagra sayaca*, *Paroaria capitata*, *Coryphospingus cristatus*, *Amblycercus solitarius*, *Cassicus albirostris*, *Aphobus chopi*, *Cyanocorax chrysops*, and *C. cæruleus* among the Oscines. Of the Tracheophonæ the most ordinary forms were *Tenioptera nengeneta*, *T. irupero*, *Fluvicola albiventris*, *Pitangus bolivianus*, *Pyrocephalus rubineus*, *Myiarchus ferox*, *Milvulus tyrannus*, *Furnarius rufus*, *Phacellodomus striaticollis*, *Xiphocolaptes major*, *Picolaptes angustirostris*, and *Thamnophilus radiatus*. The commonest Picarians were *Colaptes agricola*, three species of *Ceryle*, *Crotophaga ani*, *C. major*, *Diplopterus nœvius*, and *Rhamphastos toco*. The ordinary Parrots were *Chrysotis æstiva* and *Bolborhynchus monachus*. *Polyborus tharus* and *Cathartes atratus* were plentiful, and also five species of Herons. Amongst the Water-birds Mr. Kerr had noted *Phimosus infuscatus*, *Ajaja rosea*, *Chauna cristata*, and four species of Ducks, besides some well-known Rails, Plovers, and other Waders. A diving-bird, apparently *Plotus anhinga*, was very common all along the river. The heavy rains during the stay of the party at Concepcion had filled up all the swamps on the Chaco, which had previously experienced a prolonged drought of several months.

Mr. SCLATER exhibited a skin of a chick in down, a few days old, of the Crested Screamer, *Chauna cristata*, which had been presented to him by Mr. A. Holland, of the Estancia

Sta. Elena, Argentine Republic, and remarked upon its great general similarity to the young of the Anatidæ. Mr. Holland had noted the bill as dark brown, tip yellowish, iris black, and feet flesh-colour.

No. XLI. (January 31st, 1897.)

THE fortieth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 20th of January, 1897.

Chairman : P. L. SCLATER, F.R.S.

Members present :—G. E. H. BARRETT-HAMILTON, E. BIDWELL, Lieut.-Col. C. T. BINGHAM, F. E. BLAAUW, J. L. BONHOTE, P. CROWLEY, W. E. DE WINTON, Dr. F. D. DREWITT, H. O. FORBES, E. HARTERT, Sir HERBERT MAXWELL, Bart., R. NESHAM, H. J. PEARSON, H. SAUNDERS (*Treasurer*), R. B. SHARPE (*Editor*), W. B. TEGETMEIER, N. F. TICEHURST, A. B. R. TREVOR-BATTYE, WATKIN WATKINS, H. M. WALLIS, C. A. WRIGHT, J. YOUNG.

Visitors : Sir ANDREW N. AGNEW, Bart., J. ALLAN, J. CYRIL CROWLEY, C. B. GEDGE, PERCY JAQUES, Col. H. MURRAY.

Mr. W. R. OGILVIE GRANT described a new Francolin, discovered by Mr. F. J. Jackson in the Kikuyu district, British East Africa, as follows :—

FRANCOLINUS KIKUYUENSIS, n. sp.

Most nearly allied to *F. levaillanti*, but the middle of the throat suffused with chestnut; the feathers of the superciliary stripes and the stripes from the gape along the sides of the throat pale rufous, with narrow black edgings, very different from the boldly-marked black and white stripes in *F. levaillanti*. The patch of black and white feathers so conspicuous on the fore neck and upper part of the chest in *F. levaillanti* are represented by a much smaller patch with the ground-colour rufous white. The breast and

underparts are buff, barred with black, especially on the sides and flanks, the chestnut markings so conspicuous in *F. levaillanti* being at most merely represented by one or two scattered red spots on the outside flank-feathers.

Total length about 12 inches, culmen 1·45, wing 6·8, tail 3·1, tarsus 2·0.

A letter was read from Professor MENZBIER, correcting some errors which had appeared in the account of the new *Syrnium* described by him at the Meeting of the Club on October 21, 1896 (see Bull. B. O. C. no. xxxviii. p. vi; *suprà*, p. 113). The name of the species should have been printed *Syrnium willkonskii*, and the sentence "collari albo vel cinereo, etc." should read "colare albo vel, etc."

Mr. HOWARD SAUNDERS exhibited, on behalf of Mr. J. T. Proud, of Bishop Auckland, a specimen of the Roscate Tern (*Sterna dougalli*) and two clutches of the eggs, obtained by the latter gentleman on the coast of Wales last year.

A paper was read from Dr. SHUFELDT on the attitudes of Loons and Grebes when on land. This paper was intended for publication in 'The Ibis.'

The Hon. WALTER ROTHSCHILD sent for exhibition by Mr. Hartert the type of *Loboparadisea sericea*, which had been described at the last meeting of the B. O. Club, and which would be figured in the 'Novitates Zoologicæ'; also an adult and a young male of the remarkable *Nemophilus macgregoriae* (De Vis), and a series of skins of *Loria loriae*, respecting which he sent the following note:—

"Dr. Bowdler Sharpe, in Part VI. of his 'Monograph of the Paradiseidæ,' still leaves the identity of *Loria mariæ* (De Vis) and *Loria loriae*, Salvad., an open question. Since he had my series for comparison, I have had two more males, one from Mount Victoria, Owen Stanley Range, and one from the Arfak Region. The Mount Victoria bird shows the naked line very large and distinctly, and also that the apparent presence or absence of this character is entirely

due to preparation. Thus I think no one can any longer doubt the identity of De Vis and Salvadori's species, which must stand under the name of *Loria loriæ*, Salvadori."

Mr. ERNST HARTERT exhibited specimens of *Nucifraga brachyrhyncha* and *N. macrorhyncha* of C. L. Brehm. [For his remarks, see Bull. no. xlii. p. xxxi; *infra*, p. 265.]

Mr. HARTERT also exhibited and drew attention to *Certhia familiaris*, L., and *C. brachydactyla*, C. L. Brehm, the former being paler above, purer white below, and having a shorter bill. *C. brachydactyla* was darker and browner above, not so pure white below, and had generally a much longer beak. The former was the usual form in East Prussia, where Mr. Hartert had collected many specimens which were all true *C. familiaris*, while on the Lower Rhine, near Wesel, where the bird was very common, over 40 specimens, shot at different times of the year, were all typical *C. brachydactyla*. Also all the birds examined from Holland and Northern Westphalia were *C. brachydactyla*. But not everywhere were they so definitely separated. Even in East Prussia, *C. brachydactyla* had been found recently; and in Hesse, in Saxony, and in Silesia both occurred close to each other. At Schloss Berlepsch the true *C. familiaris* was found on the hills, but *C. brachydactyla* occurred in the valley, on the willows and poplars along the river. Mr. Kleinschmidt thought the former was an inhabitant of pine-forests, the latter more a bird of leafy woods, such as oak and beech, and of parks and gardens. This explanation was probably right, but in some places the forms did not seem to be so well separated as they were in Prussia and Holland, for example. However, as the note of the two birds was certainly different (as already proved by Brehm, Homeyer, Kleinschmidt, and others), and as the eggs of *C. brachydactyla* were mostly, though not always, more thickly blotched, they would at present better stand as species than as subspecies, until it might turn out that they intergrade completely in certain places. The British bird was *C. brachydactyla* in a slightly differentiated form, and *C. familiaris* did not seem to occur in England at all.

Mr. SCLATER read an extract from a letter received from Mr. Graham Kerr, dated Waikthlatimungyalwa, in the Chaco Boreal of Paraguay (lat. $23^{\circ} 30'$ S. approx.), in which he stated that his time had been fully occupied since he had arrived there (from Concepcion) with researches upon *Lepidosiren*, which was very abundant. He had, however, observed many birds, amongst which were *Turdus rufiventris*, *Poliophtila dunicola*, *Tanagra sayaca*, *Saltator cærulescens*, *S. aurantirostris*, *Molothrus badius*, *Agelæus ruficapillus*, *A. cyanopus*, *Tenioptera nengeta*, *T. irupero*, *Machetornis rixosa*, *Hapalocercus flaviventris*, *Leuconerpes candidus*, *Colaptes agricola*, *Picus cactorum*, *Rhamphastos toco*, *Conurus acuticaudatus*, *C. nanday*, *Pyrrhura vittata*, *Urubitinga zonura*, *Cathartes atratus*, *Ortalis canicollis*, and *Cariama cristata*, besides many others, and numerous Herons and Ducks. After the pressing work of collecting specimens of the *Lepidosiren* was over, he proposed to make some bird-skins, but, on the whole, the avifauna here appeared to be poorer than on the Pilcomayo.

Mr. SCLATER exhibited a specimen of a new Paradise-bird sent to be figured in 'The Ibis' by Mr. De Vis, and proposed to be named *Macgregoria pulchra*. It had large eye-wattles like *Paradigalla carunculata*, but quite different in shape, and the front was not naked, but covered with erect bristles. This species had been discovered by Sir William Macgregor on Mount Scratchley during his recent expedition across British New Guinea at an altitude of from 10,000 to 12,000 feet.

Mr. SCLATER exhibited a drawing, by Mrs. Frederick White, of Georgetown, British Guiana, representing the nest and egg of the Demeraran Cock-of-the-Rock, *Rupicola crocea*, of natural size, being one of the specimens obtained by Mr. C. A. Lloyd on the Pizara River (see 'The Ibis,' 1896, p. 429, quoted from 'Timchri'). Mr. Sclater observed that the egg of *Rupicola peruviana* had been described and figured by Goudot (Mag. de Zool. 1843, Ois. pl. 37) and by Salmon (P. Z. S. 1879, p. 519), but that he was not acquainted with any previous information as to the nesting

of *R. crocea*, except that of Schomburgk ('Reise,' ii. p. 432).

As regards the drawing, Mr. Quelch remarked:—"It is of the exact natural size in every respect. The fibres and twigs of which the nest is composed are clearly shown, together with the outer gum-like lining, which serves to bind the edges of the nest together and to attach it to the rocks. The blotches on the egg are also very carefully represented."

Mr. SCLATER also exhibited a coloured drawing representing the nest of a Guianan Swift (*Panyptila cayennensis*) of the natural size, drawn by Mrs. George Garnett, of Georgetown, and forwarded to him by Mr. Quelch. He called attention to its resemblance to the nest of *P. sancti-hieronymi*, Salvin, figured in the P. Z. S. for 1863, p. 191, and read the following notes upon it, extracted from Mr. Quelch's letter:—

"This figure is also of the exact natural size and shape. The nests are built attached on the top to a beam, pendent vertically, the aperture being at the bottom.

"The material used in two nests observed was the fine silky fibres from the dried fruit or seed of one of the silk-cotton-trees (*Eriodendron*, sp. inc.), the nest being very soft and warm. The eggs are placed in a little cup-like shelf on one side, at the very top, where the birds would almost touch the few fibres against the beam. There were two young ones in the nest when taken, and one escaped, being strong enough to fly.

"The cross section of the nest is not round, but oval, and the eggs lie on a shelf in one of the sharp curves. One curious thing in connection with one of the nests was that there were no silk-cotton-trees from which the silky hairs or fibres could be obtained for a distance of some miles from its position. The nest was taken from under a house in Leguan (an island in the estuary of the Essequibo) by Mr. H. Straker, sub-immigration agent."

Mr. W. EAGLE CLARKE sent an account of the occurrence of the Frigate-Petrel (*Pelagodroma marina*) on the west side of Scotland. The bird, a female, was captured alive on

1st January of this year, by the margin of a stream on the west side of the island of Colonsay. Having been forwarded in the flesh to Edinburgh and identified by Mr. Clarke, it is now in the Scottish National collection, in the Museum of Science and Art in that city. The closing week of December last had been remarkable for a succession of south-westerly gales. This was the second recorded occurrence of this Petrel in European seas; and it was interesting to note that the first record was also for the west coast of Britain, namely, at Walney Island, in Morecambe Bay, where a specimen was washed ashore dead in November 1890.

Mr. W. B. TEGETMEIER exhibited a hybrid between the Pheasant and Black Grouse and a curious spangled variety of the Common Partridge.

The Club passed resolutions of sympathy with the family of Herr Gaetke on the death of that eminent ornithologist, and with Mr. J. A. Harvie-Brown on the loss of the ornithological collections at Dunipace by fire.

No. XLII. (February 27th, 1897.)

THE forty-first Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 17th of February, 1897.

Chairman: P. L. SCLATER, F.R.S.

Members present:—E. BIDWELL, F. C. CRAWFORD, PHILIP CROWLEY, W. E. DE WINTON, Dr. F. D. DREWITT, W. GRAHAM, W. R. OGILVIE GRANT, G. E. B. MEADE-WALDO, R. NESHAM, HEATLEY NOBLE, T. PARKIN, F. PENROSE, HOWARD SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), A. B. R. TREVOR-BATTYE, H. M. WALLIS, LIONEL A. WILLIAMS, JOHN YOUNG.

Visitors: REGINALD BARRATT, R. A. CROWLEY, RUSSELL JAKES, M. E. SIMON (Paris).

Mr. H. M. WALLIS exhibited a sketch, accompanied by notes from his diary, of a bird believed by him to be a Diver, which he had observed sitting in an upright position. In the discussion which ensued, the opinion of the ornithologists present was, that the Divers never assumed an erect attitude. Mr. Sclater said that, in the experience of Mr. A. D. Bartlett, none of the many Divers which had lived in the Zoological Gardens had ever attempted to stand upright. This was confirmed by Mr. Meade-Waldo, who had also kept several Divers in captivity.

Mr. T. PARKIN exhibited an egg which had been dredged by a trawler in Rye Bay, Sussex (*cf.* 'Field,' May 26th, June 2nd and 9th, 1894), and was supposed to be that of the Velvet Scoter, because birds of that species had recently frequented those waters. Mr. Parkin stated that, after a comparison of this egg with those of *Edemia fusca* in the Natural History Museum, it clearly did not belong to this species.

Mr. OSBERT SALVIN sent the following descriptions of two new species of Humming-Birds, specimens of which had been obtained by Mr. O. T. Baron during his recent expedition to Peru :—

DIPHLOGÆNA EVA, sp. n.

D. hespero proxima, sed supra rufescentiore viridi, nucha et cervice postica nitente saturate rubris nec intense nigris, abdomine parte postica latiore rufa et cum tectricibus subcaudalibus pallidiore; rostro quoque longiore differt.

Hab. Succha, E. Peru, January to March 1894 (*O. T. Baron*).

In my paper on Mr. Baron's birds (Nov. Zool. ii. p. 15), I referred several specimens of a *Diphlogæna* from Succha, with doubt, to the Ecuadorean *D. hesperus*, Gould. None of them were quite adult. Mr. Baron's recent collection contains additional specimens, and amongst them one fully-adult bird which has the characteristic lilac thoracic spot.

The dark shining red colour of the nape and back of the neck in the new bird is in strong contrast to the deep black of these parts in *D. hesperus*, and, with the other minor

points mentioned above, proves *D. era* to be a distinct species.

The true *D. iris* occurs further to the eastward in Peru, and Mr. Baron obtained specimens of it at Leimebamba.

† *ERIOCNEMIS CATHARINA*, sp. n.

Nitenti-viridis, cervice postica, dorso antico et tectricibus alarum aureo lavatis, dorso postico et tectricibus supra-caudalibus nitide cæruleo-viridibus, his lætioribus, fronte cæruleo tineta: subtus micanti-viridis, gutture toto aureo lavato, abdomine medio cæruleo tincto, subcaudalibus nitide purpureo-cyaneis; cauda omnino viridinigra; rostro nigro. Long. tota circa 4·5, alæ 2·75, caudæ rectr. med. 1·3, rectr. lat. 1·75.

♀ mari similis, gutturi plumis ad basin albis plaga terminali magna viridi.

Hab. Leimebamba, E. Peru, July 1894 (*O. T. Baron*).

Obs. *E. luciani* similis, sed uropygio et abdomine medio cyanescentioribus, cauda multo minus furcata facile distinguenda.

Mr. ERNST HARTERT stated that the names of the two *Nucifragæ* had been reversed in the note published in the last number of the 'Bulletin,' and that to avoid further misunderstanding he wished his full statement to be inserted verbatim:—

"Long ago C. L. Brehm had separated the *Nucifraga caryocatactes* of Linnæus into two forms, which he called *N. brachyrhynchus* and *N. macrorhynchus*, his *N. brachyrhynchus*, however, being the typical *N. caryocatactes* of Linnæus. British ornithologists generally, almost with the sole exception of Seebohm, who had acknowledged the two forms, had never believed in them. Prof. Newton, for example (*Diet. B.* p. 647), had declared that, 'as in the case of the *Huia*, this was now supposed to depend on the sex,' a statement which was certainly not right. Dr. Sharpe (*Brit. B. i.* p. 17) had said he had 'never been able to appreciate the supposed differences.' Mr. Hartert had frequently met with the thick-billed form in North-east Prussia, where he had found its nests and eggs, and had collected a large series of birds, and they were *all* thick-billed. This was *N. caryoca-*

tactes, L. The same was the case with birds from Scandinavia, the Alps, and the Hungarian mountains. All these birds were resident throughout the year and *did not wander*, while the thin-billed form, *N. macrorhynchus*, C. L. Brehm, which alone inhabited Siberia, frequently wandered in a south-westerly direction, and sometimes occurred all over Germany in great numbers. The differences of the beaks alone were sufficient to separate the two forms, but there were some other differences between them."

The Hon. WALTER ROTHSCHILD sent the following description of a new *Rhamphocælus*, which he proposed to call

†-RHAMPHOCÆLUS INEXPECTATUS, sp. nov.

Chin, sides of neck, head, hind neck, interscapulum, wings, with upper and under coverts, tail, centre of abdomen, and thighs black; rest of plumage bright yellow. This yellow is much darker than that of the rump in *Rh. icteronotus*, Bp., but not orange as in *Rh. chrysopterus*, Bouc. On the occiput are a number of scattered feathers bordered with yellow; this may or may not be the remains of immature plumage. Total length 155 mm., wing 82, tail 70, culmen 16, tarsus 20.

Hab. Panama.

Mr. SCLATER made some remarks on the specimens of bones of *Genyornis newtoni* exhibited to the Zoological Society by Prof. Stirling at their last meeting.

Mr. A. TREVOR-BATTYE made some remarks on the Bernacle Goose (*Branta leucopsis*), Brünnich's Guillemot (*Uria bruennichi*), and other species of birds observed by him in Spitsbergen.

XXI.—Notices of recent Ornithological Publications.

[Continued from p. 137.]

28. 'Aquila' for 1896.

[Aquila. A Magyar Ornithologiai Központ Folyóirata. Redact. Herman Ottó. Jahrg. III. 1896. Budapest, 1896.]

The volume of 'Aquila' for 1896, printed in parallel

columns of Magyar and German, contains a variety of interesting papers, among which we may call attention to those by Prazák on *Acrocephalus palustris horticola* and *Coturnix baldami* of Brehm, the latter apparently a form of *C. communis*. Good coloured figures are given of *Pastor roseus* and *Coturnix baldami*.

29. Arrigoni degli Oddi on Italian Sport and Ornithology.

[La Caccia di Botte o di Valle nelle Lagune di Venezia. Del Dottor Ettore Arrigoni degli Oddi. 8vo. Milano, 1894.

Le ultime apparizioni dell' *Actochelidon sandvicensis* (Latham) nel Veneziano. Nota ornitologica del Dott. Ettore Arrigoni degli Oddi. Atti Soc. Ital. Sci. Nat. xxxvi. p. 17.]

The first little pamphlet contains an account of the marshes and canals in the neighbourhood of Venice, the wild-fowl which frequent them, and the local terms employed in the sport. We notice it because it has been sent to us, and also because it would be useful to any ornithologist who might wish to devote his attention to that district.

The second contribution gives details of the somewhat plentiful occurrence in the vicinity of Venice in the autumn of 1894 of the Tern which we call *Sterna cantiaca*, and which appears to be otherwise a rare visitor.

30. Sir Joseph Banks's Journal.

[Journal of the Rt. Hon. Sir Joseph Banks, Bart., K.B., P.R.S., during Capt. Cook's First Voyage in H.M.S. 'Endeavour' in 1768-71 to Tierra del Fuego, Otaheite, New Zealand, Australia, the Dutch East Indies, &c. Edited by Sir Joseph D. Hooker. London: Macmillan & Co., 1896.]

All naturalists will agree in thanking Sir Joseph Hooker for editing and publishing the most interesting Journal kept by Sir Joseph Banks during Cook's First Voyage round the World. It is remarkable that the original of this precious MS. should have been lost, and that the present volume has been prepared from a transcript now in the British Museum. The Journal is accompanied by biographical sketches and portraits of Banks and his librarian and naturalist Solander, and by excellent footnotes. To the sea-birds obtained and observed frequent allusions will be found throughout the

narrative, and many of the birds are provided with MS. names, which are in most cases, of course, indeterminable. We copy (from p. 208) a short passage on a point as regards the Albatrosses, which seems to be of some interest. It is dated January 6th, 1770, when the 'Endeavour' was on the coast of New Zealand :—

"Calm to-day. Shot *Procellaria longipes*, *P. velox*, and *Diomedea exulans* (the Albatross). I had an opportunity of seeing this last sit upon the water; and, as it is commonly said by seamen that they cannot in a calm rise upon the wing, I tried the experiment. There were two of them. One I shot dead; the other, which was near it, swam off nearly as fast as my small boat could row. We gave chase and gained a little; the bird attempted to fly by trying to take off from a falling wave, but did not succeed: I, who was so far off that I knew I could not hurt him, fired at him to make his attempts more vigorous; this had the desired result, for at the third effort he got upon the wing, though I believe that, had it not been for a little swell upon the water, he could not have done it."

31. Bendire's 'Life-Histories of North-American Birds.'

[Life-Histories of North-American Birds, from the Parrots to the Grackles, with special reference to their Breeding-habits and Eggs, with seven Lithographic Plates. By Charles Bendire, Captain and Brevet-Major, U.S. Army (retired). Vol. II. 4to. Washington: 1895. Smiths. Inst. U.S. Nat. Mus., Special Bulletin.]

We have received with great pleasure a copy of the second portion of Major Bendire's 'Life-Histories of North-American Birds,' the first part of which was issued in 1892 (see 'Ibis,' 1893, p. 126). The nature and scope of this excellent piece of work were explained in our notice of the first portion. In the present part are described in a similar way the breeding-habits, nests, eggs, and distribution of the *Psittaci*, *Picariæ*, *Macrochires*, and *Passeres*, down to the end of the *Icteridæ*, according to the order and arrangement of the Code and Check-list of the American Ornithologists' Union. The illustrations consist of seven correctly coloured plates of the eggs of these groups. As in the former case, the

volume is beautifully printed and got up, and does credit alike to the Smithsonian Institution and the author. We observe with satisfaction that, although Major Bendire follows the Check-list, he does not scruple to express his own opinion as to the claims of some of the species and subspecies to the rank accorded to them in that work.*

32. *Brandes on the Bird's Gizzard.*

[Ueber den vermeintlichen Einfluss veränderter Ernährung auf die Struktur des Vogelmagens. Von Dr. G. Brandes. Biol. Centralbl. xvi. pp. 825-838, cuts.]

The well-known experiment of John Hunter—so often quoted—on the supposed increase of thickness in the Gull's gizzard produced by feeding the bird upon corn, and the analogous experiments of Holmgren upon the converse change in the Pigeon's gizzard when fed upon flesh, are subjected in this paper to a double criticism. In the first place Dr. Brandes made actual experiments upon a Gull and a Dove, and came to a negative conclusion: that is to say, he discovered no alteration. In the second place he suggested, from a careful reading of the facts stated by the two authorities for this supposed change, that pathological conditions had been ignored. The gizzard of the Pigeon fed and dissected by Holmgren was perforated by a splinter of glass, a possibly sufficient cause for the alteration in the muscular coat of the organ. Furthermore, Dr. Brandes compared (and has figured in the paper) three gizzards of *Larus argentatus*, which show considerable differences in the thickness of their muscular walls; the thickest-walled gizzard of the three is fully twice as thick as the thinnest. Until, therefore, we are acquainted with the range of variation in this organ it is idle to take isolated examples and assert that the thickness has been increased by an abnormal food.

33. *Bull's Cruise of the 'Antarctic.'*

[The Cruise of the 'Antarctic' to the South Polar Regions. By H. J. Bull. London: 1896.]

Mr. Bull went to the South Polar Regions as a pioneer

* [Since this notice was in type we have learned, with great regret, the death of the author. See "Obituary," p. 294.—EDD.]

for Commander Foyen in order to ascertain whether "right whales" are to be found in the Antarctic Seas, and though unsuccessful on the main point, he seems to have done much useful work, in spite of various misfortunes. Going out in the s.s. 'Antarctic,' specially equipped for the purpose, he visited Tristan da Cunha and Kerguelen Land before reaching Melbourne, and did some "sealing." Leaving Australia in September, 1894, for the South Polar Seas, Mr. Bull passed from the Campbell Islands to the Balleny group, and after a tremendous struggle with the icebergs and floes, he and his party, on January 24th, 1895, effected a landing on the Antarctic continent under Cape Adare, Victoria Land—being the first of mankind who have ever accomplished this feat. "Myriads of Penguins fairly covered the flat promontory, many acres in extent, jutting out into the bay, between Cape Adare and a more westerly headland; they further lined all accessible projections of the rocks to an altitude of 800 or 900 feet. The youngsters were now almost full-grown. In their thick, woolly, and grey down they exhibited a most remarkable and comical appearance. At a distance the confused din and screaming emanating from parents and children resembled the uproar of an excited human assembly, thousands in number."

Many other passages relating to the birds of the Antarctic Seas will be found in Mr. Bull's narrative (see pp. 62, 135, 156), which is well worthy of perusal; but the want of a handy map is a great defect in the volume.

34. *Butler's 'British Birds.'*

[British Birds, with their Nests and Eggs. In Six Volumes. Order Passeres (First Part). By Arthur G. Butler, Ph.D., F.L.S., F.Z.S. Illustrated by F. W. Frohawk, M.B.O.U., F.E.S. Vol. I. Folio. Brumby & Clarke: Hull & London. 1896.]

This is an excellent piece of work, and Dr. Butler's practical acquaintance with the habits of Passerine birds in confinement is a characteristic feature of the present volume. Mr. Frohawk may be congratulated on his success in depicting in black and white the distinguishing characters of

many of the closely-allied Warblers—a very difficult task to accomplish. We fail to see why the claims of the Aquatic Warbler to rank as a “British” bird should be considered superior to those of the Great Reed-Warbler, the Icterine Warbler, and other birds which occurred in Britain years before the Aquatic Warbler was recognized. The families treated in this volume are the Turdidæ, Cinclidæ, Panuridæ, Paridæ, Sittidæ, Troglodytidae, Certhiidae, and Motacillidæ.

35. *Büttikofer on a new Duck.*

[On a new Duck from the Island of Sumba. By Dr. J. Büttikofer. Notes Leyden Mus. xviii. p. 59.]

An imperfect skin from the East-Indian island of Sumba, and now in the Leyden Museum, is referred by Dr. Büttikofer to a new species of rather uncertain position, which he names for the present *Anas salvadorii*. It is allied to *Nettion castaneum* and *Elasmonetta chlorotis* of Count Salvadori's ‘Catalogue.’

36. *Büttikofer on two Generic Names of Birds.*

[Rectification of two Generic Names. By Dr. J. Büttikofer. Notes Leyden Mus. xviii. p. 58.]

Dr. Büttikofer changes his names *Centrolophus* and *Gymnocrotaphus*, lately proposed for two genera of Pycnonotine forms, to *Bostrycholophus* and *Bonapartia* respectively.

37. *Čapek on the Reproduction of the Cuckoo.*

[Beiträge zur Fortpflanzungsgeschichte des Kuckucks. Von W. Čapek. Ornith. Jahrb. vii. 1896.]

Although the literature on the Cuckoo and its reproductive vagaries is already so large, Herr Čapek has done well, we think, in giving us the benefit of his personal experiences on this subject and of his deductions therefrom. They have been made at Oslawan, near Brunn, in a secluded district of Moravia, where Cuckoos are apparently very abundant, and have been continued for many years. The catalogue of

Cuckoos' eggs, with which the author commences his treatise, contains a list of 225 specimens taken at Oslawan, with ample particulars about each of them, such as the date, foster-parent, size, weight, and type of colouring. In Moravia, it seems, the nest of the Robin is that mostly selected by the Cuckoo for the deposit of its eggs. Out of 273 instances in which Cuckoos' eggs or young were found, 92 belonged to *Erithacus rubecula*, but the Redstart (*Ruticilla phæniceus*), with 88 cases, nearly rivals it. After these the three species most selected by the Cuckoo are *Lanius collurio* (40 cases), *Motacilla alba* (11 cases), and *Phylloscopus sibilatrix* (17 cases). In various tables which follow are full details concerning the Cuckoos of Oslawan—their numbers, the proportion of males to females, the times of their arrival and departure, the length of the egg-laying period (usually from 40 to 60 days), the size, form, colour, and texture of the eggs; and are accompanied by ample explanations of all these and many other points. We can safely commend this excellent essay to the attention of those interested in the engrossing subject of the Cuckoo.

38. Clarke (W. E.) on the Migration of Birds.

[Bird Migration in Great Britain and Ireland.—Report of the Committee, consisting of Professor Newton (Chairman), Mr. John Cordeaux (Secretary), Mr. John A. Harvie-Brown, Mr. R. M. Barrington, Mr. W. Eagle Clarke, and Rev. E. P. Knubley, appointed for the purpose of making a Digest of the Observations on the Migrations of Birds at Light-houses and Light-vessels, 1880-1887. 8vo. British Association, 1896.]

Although necessarily set forth as the Report of the above Committee, the preparation of this admirable digest is the work of Mr. W. Eagle Clarke, who has devoted several years of arduous labour to putting into shape the material for this little pamphlet of only 27 pages! As it stands it is a marvel of condensed facts, and some of these facts sweep away old superstitions like cobwebs. It used to be supposed that the east-to-west migration which affected Heligoland in autumn would be in some degree continued to the British Islands, and that a reflex movement would take place in spring; but

uncompromising data show that such intermigrations are the rare exception and not the rule. Another fond fancy was that the migrations of many species of birds depended upon the direction of the wind; but this is true only to a very limited extent, and it is the temperature at the point of departure which plays the most important part in the seasonal movements. Practically the wind is not a factor, for although all birds cannot fly in the teeth of an absolute gale, they can sail uncommonly close to any reasonable wind, and they do so. We must not, however, pick any more valuable items out of this admirable treatise, and if any one of our readers has not yet provided himself with it, we should advise him to lose no time in obtaining this indispensable work.

39. *Dresser's Supplement to the 'Birds of Europe.'*

[A History of the Birds of Europe, including all the Species inhabiting the Western Palearctic Region. Supplement. By H. E. Dresser, F.L.S., F.Z.S., &c. Part IX. November, 1896.]

With the ninth part of his Supplement to the 'Birds of Europe,' Mr. Dresser brings this important addition to our knowledge of the Western Palearctic avifauna to a successful conclusion. A useful "List of Species which have been recorded as having occurred in Europe," but which (for divers good reasons) have not been recognized by Mr. Dresser, follows the systematic portion, and a supplementary list of the publications referring to European ornithology issued since the completion of the 'Birds of Europe' in 1881 is given in the Introduction. We heartily congratulate our friend and fellow-worker on thus concluding a long and arduous undertaking, to which he has devoted many years of patient labour.

The following species are figured in Part IX. :—

Francolinus bicalcaratus.

Grus antigone.

Lobivanellus indicus.

Tringa acuminata.

Larus philadelphia.

Oceanodroma cryptoleucura.

Puffinus obscurus.

Estrelata mollis.

Colymbus adamsi.

40. *Gurney on a New-Zealand Owl.*

[The New Zealand Owl (*Sceloglaux albifacies*, Gray) in Captivity. By J. H. Gurney, F.L.S. Trans. Norf. & Norw. Nat. Soc. vi. p. 154.]

Mr. Gurney gives us some useful notes on *Sceloglaux albifacies*, the White-faced Owl of New Zealand, now a rare bird. These are based on a living specimen which was procured near Timaru, in the Southern Island, in 1895, but unfortunately did not survive long in captivity. An outline of the bird from life, and a figure of its tongue, are added. Besides the examples mentioned by Mr. Gurney, a living individual of this Owl was obtained by the Zoological Society in September, 1875 (see P. Z. S. 1875, p. 530).

41. *Hood and Coues on Ornithology.*

[Papers presented to the World's Congress on Ornithology. Edited by Mrs. E. Irene Hood, under the direction of Dr. Elliott Coues. 8vo. Chicago: 1896.]

This is a collection of nicely-written essays on various subjects relating to birds, either read or taken as read at the "World's Congress on Ornithology," in connection with the Centennial Exhibition at Chicago, in October 1893. The Presidential Address was written by Dr. Coues, who was himself unfortunately unable to be present. Mr. Allen's "Migration of Birds" gives a good popular account of modern views of this subject. Mr. Quelch's address on the Birds of British Guiana will be read with interest. Dr. Leverkühn contributes an account of his gallery of the portraits of ornithologists. We are glad to see so many references made to the question of the protection of bird-life, which is assuming greater importance every year. Mr. Pearson writes as follows of his visit, after three years' absence, to a well-known haunt of Herons in Central Florida, where he had found several hundred pairs nesting in 1888:—"The scene had changed. Not a Heron was visible. I discharged my revolver, but the answering echoes and the tapping of a Woodpecker were the only response. The call had come from northern cities for greater quantities of Heron-plumes for millinery. The plume-hunter had

discovered the colony, and a few shattered nests were all that was left to tell of the once populous colony. The few surviving tenants, if there were any, had fled in terror to the recesses of wilder swamps. Wearily I descended from the tree to find among the leaves and mould the crumbling bones of slaughtered birds."

42. *Judd and Beal on the Food of American Birds.*

[Four Common Birds of the Farm and Garden. By Sylvester D. Judd.

The Meadow-Lark and Baltimore Oriole. By F. E. L. Beal. Repr. from Year-book U.S. Dept. Agr. 1895, p. 405.]

Messrs. Judd and Beal, Assistant Ornithologists in the U.S. Department of Agriculture, have studied the food of six common birds of the farms and gardens of the United States, and now give us the results of their enquiries. These are in every case in favour of the usefulness of the birds, though more so in some cases than in others. "The Catbird (*Galeoscoptes carolinensis*) and the Thrasher (*Harporhynchus rufus*) subsist largely on a vegetable diet, consisting mainly of fruits, though the Thrasher, especially in spring, has a decided taste for grain and acorns."

43. *Koenig on the Birds of Algeria.*

[Reisen und Forschungen in Algerien. Von Prof. Dr. A. Koenig. Mit 24 nach photographischen Aufnahmen gefertigten Schwartzdruckbildern, 14 mit der Hand colorirten Tafeln, 2 Farbendrucktafeln und 1 Karte, 1896.]

In this volume Dr. Koenig gives us an interesting account of his expedition to the Algerian Sahara in 1892-93, in the course of which he penetrated into the interior as far as the Oases of Gardaia and Waregla, visited by Canon Tristram some forty years ago, but still insufficiently explored. In this part of the book an entertaining narrative is given of the adventures of the author and Madame Koenig, and numerous allusions to the birds observed and obtained as they went along are introduced. Twenty-four plates, taken from photographs, illustrate some of the principal scenes and incidents of the journey.

The second part of Dr. Koenig's book is a reprint of the "Beiträge zur Ornithologie Algeriens," published in the 'Journal für Ornithologie' for 1895. It contains a systematic account of the 160 species of birds met with in Algeria, with numerous and excellent field-notes on them. References are given to the works of former observers in the same district—Malherbe, Loche, Tristram, Salvin, Gurney, Dixon, &c.—and 14 coloured plates (drawn by Keulemans) contain portraits of some of the more remarkable species. Great attention seems to have been paid to the Larks and Chats, and among the latter three examples of the rare *Saxicola seebohmi* were obtained. Both sexes of this species are figured.

44. *Lee's Photographs of British Birds.*

[Among British Birds in their Nesting-Haunts, illustrated by the Camera. By Oswin A. J. Lee. Pts. I.-II. 4to. Douglas, Edinburgh.]

These two Parts are the earlier instalments of a magnificent work which is expected to run to about twenty numbers. It would be difficult to speak too highly of the plates produced, while the vignettes are in no way inferior, and the letterpress is just enough and no more. The book must be read before an adequate idea can be formed of the hardship and daring required to attain a position suitable for photographing the nests of some of the species *in situ*. Certainly we have never before seen any photographs so good under such circumstances, and the work may be thoroughly recommended to all lovers of birds'-nesting. The species—or their nests—represented are as follows:—Part I. *Somateria mollissima* (2), *Phalacrocorax carbo*, *Falco peregrinus* (2), *Asio otus*, *Accipiter nisus*, *Larus fuscus* (2), *Sterna dougalli*. Part II. *Fulica atra* (2), *Spatula clypeata*, *Rissa tridactyla*, *Gallinula chloropus* (2), *Phylloscopus trochilus*, *Sterna cantiaca*, *Tadorna cornuta* (2).

45. *Lönnerberg on some Linnean Types at Upsala.*

[Linnean Type-specimens of Birds, Reptiles, Batrachians, and Fishes in the Zoological Museum of the R. University in Upsala. Revised by

Dr. Einar Lönnberg. Bihang k. Svensk. Vet.-Ak. Handl. xxii. Afd. iv. No. 1.]

The Zoological Museum of the University of Upsala still contains a certain number of specimens of vertebrated animals which were there in the days of Linnæus. Some of these are the actual specimens from which Linnæus took his descriptions, and therefore true types of the species based upon them. Others have been known to Linnæus and were under his care, "so that the determinations of these specimens, when they agree with the descriptions in the 'Systema Naturæ,' have a certain authority."

Dr. Lönnberg discusses all these specimens, which belong mostly to the Classes of Reptiles, Batrachians, and Fishes. But there are some Birds among them (see pp. 29, 33), so that the ornithologist should not neglect to consult Dr. Lönnberg's memoir.

46. *Lorenz on the Nestor Parrots.*

[Ueber die Nestor-Papageien. Von Dr. L. v. Lorenz. Verh. k.-k. zool.-bot. Gesell. Wien, 1896.]

At a meeting of the Zoological and Botanical Society of Vienna last year, Dr. L. v. Lorenz exhibited the original specimen (formerly in the Museum Leverianum) upon which Latham based his "Southern Brown Parrot" in 1781, and *Psittacus nestor* in 1790, but to which also Gmelin attributed the name *Ps. meridionalis* in 1788, and Shaw that of *Psittacus australis* in 1792. This specimen agrees perfectly with examples lately obtained by Herr Reischek in the Southern Island of New Zealand. Dr. Lorenz is therefore of opinion that the southern form of *Nestor* should be called *Nestor meridionalis* instead of *N. montanus*, and proposes to name the corresponding form of the Northern Island *N. septentrionalis*.

47. *Lucas on the Cranium of Pallas's Cormorant.*

[Contributions to the Natural History of the Commander Islands.—XI. The Cranium of Pallas's Cormorant. By Frederic A. Lucas. Proc. U.S. Nat. Mus. xviii. p. 717, 1896.]

Mr. Lucas describes and figures the cranium of the extinct

Cormorant, *Phalacrocorax perspicillatus*, from a specimen obtained by Dr. Stejneger in 1895 from a bone-deposit on Bering Island. It most nearly resembles the skull of *P. penicillatus* among living Cormorants, but is larger and wider, while the beak is shorter.

48. *Merriam (Florence A.) on Californian Birds.*

[A-Birding on a Bronco. By Florence A. Merriam. 12mo. Boston and New York, 1896.]

In this charming little book the talented sister of Dr. C. Hart Merriam gives an account of her experiences in Southern California. Mounted on a white "bronco," whose spirit (and almost his jaw) had been broken by a Mexican bit, Miss Merriam rambled and scrambled among the Coast Mountains, not far from San Diego, and only twelve miles from the Pacific, acquiring a capital insight respecting the private life of the birds of the district. The style of work is popular, and there are numerous photogravure illustrations.

49. *Newton and Gadow's 'Dictionary of Birds,' Part IV.*

[A Dictionary of Birds. By Alfred Newton, assisted by Hans Gadow. With Contributions from Richard Lydekker, Charles E. Roy, and Robert W. Shufeldt. Part IV. London: A. & C. Black, 1896.]

A copy of the fourth and concluding part of the 'Dictionary of Birds' came to us on January 1st and formed a welcome New Year's gift, for which we are duly grateful. We are sure that all ornithologists will hail the completion of this work with pleasure. The general plan and scope of the Dictionary are so well known from the three former parts that we need not now recur to them. We may remark that Skull, Solitaire, and Syrinx are three articles that have specially interested us in the present part.

As regards the Tinamous, it is not quite accurate to say that they are "especially characteristic of the Patagonian or Chilian portion of the Neotropical Region." Only two species are found in Chili, and only eight in Argentina, most of which occur in the northern provinces, while nearly all the species of *Tinamus*, *Nothocercus*, and *Crypturus* (of which

Count Salvadori enumerates 44) are from tropical America. But it is the Introduction of 120 pages that differentiates the final part of the Dictionary from its predecessors, and in this will be found a mass of information on every branch of Ornithology, put together in a way which evidences a practised and skilful writer on a favourite subject.

The objections to the alphabetical arrangement involved in a Dictionary, we may say in conclusion, are much obviated by the full and clearly-printed Index that concludes the volume.

50. *North on the Nest of Petræca leggii.*

[Note on a Nest of *Petræca leggii*, Sharpe, the Scarlet-breasted Robin. By Alfred J. North, F.L.S. Records Austral. Mus. ii. No. 6.]

The author describes and figures the nest and three eggs of the Scarlet-breasted Robin (*Petræca leggi*) of Australia, from a specimen taken at Bayswater, Victoria, in November 1894. It is cup-shaped, very neatly made, and was placed in a hollow stem of a mountain musk (*Olearia argophylla*), about six feet from the ground. The nest will form part of the "Group Collection" in the Australian Museum, Sydney, which illustrates the life-history of Australian birds.

51. *North on the Insectivorous Birds of New South Wales.*

[A List of the Insectivorous Birds of New South Wales. By Alfred J. North, C.M.Z.S. Part I. 8vo. Sydney, 1896.]

Mr. North proposes to catalogue the insect-eating birds of New South Wales in order to show what species are beneficial to agriculture and should receive protection. He divides such birds into three groups: (1) those exclusively insectivorous; (2) those partially insectivorous; (3) those also partly frugivorous, and therefore more or less harmless. The present portion of the catalogue treats of 63 species of the first class. It is illustrated by 10 plates, mostly coloured, rather rough in character, but sufficiently accurate for practical purposes.

52. *Poynting's 'Eggs of British Birds.'*

[Eggs of British Birds.—Limicolæ (Plovers, Snipes, Sandpipers, &c.). By Frank Poynting. Part IV. 4to. London: R. H. Porter, 1896.]

In offering our congratulations to the author on the completion of the final part of his excellent work, we can only repeat our opinion (Ibis, 1896, p. 278) that this is the best series of illustrations of eggs since the days of Hewitson, and in some respects it even surpasses the utmost efforts of that pioneer in oology. And certainly such a series of the eggs of the Little Stint, Bar-tailed Godwit, and some others have never been—and never could have been—portrayed before.

The following species are noticed in this Part, but the eggs of the Knot, Curlew-Sandpiper, Sharp-tailed Sandpiper, and Solitary Sandpiper are not represented—for the best of reasons:—*Ædicnemus scolopax*, *Glareola pratincola*, *Charadrius asiaticus*, *Squatarola helvetica*, *Vanellus gregarius*, *Gallinago major*, *Tringa minuta*, *T. temmincki*, *Totanus hypoleucus*, *T. glareola*, *T. flavipes*, *T. canescens*, *Limosa lapponica*, *Tringa acuminata*, *T. subarquata*, *T. canutus*, and *Totanus solitarius*.

53. *Reiser and Führer's 'Ornis Balcanica.'*

[Materialien zu einer Ornis Balcanica herausgegeben vom Bosnisch-Hercegovinischen Landesmuseum in Sarajevo.—IV. Montenegro. Von Othmar Reiser und Ludwig v. Führer. Wien, 1896.]

We have now before us, thanks to the courtesy of Herr Reiser, a copy of the fourth part of the 'Ornis Balcanica,' which relates to the Birds of Montenegro. We have already noticed the second part of this work, and are informed that Part I., relating to the Ornis of Bosnia and Herzegovina, and Part III., relating to that of Greece, are in preparation. When these parts are issued the ornithologist will have no longer to complain of want of good information on the birds of the Balkan Peninsula.

The present volume commences with an account of the various journeys to Montenegro, from 1890 to 1895, which were undertaken with a view of obtaining materials for the present work. From October 1893 to the same month in

1894, a whole year was spent in the Principality by Herr Reiser—his headquarters being at Podgoritzta, within easy reach of the great Lake of Scutari. But, as will be seen by the maps attached to the volume, nearly the whole of Montenegro was traversed at one time or another. The list given at the close of the account of the travels shows that examples of 237 species of birds were thus obtained personally by the authors in Montenegro, and that 31 more have been recorded by other observers, making the total number of Montenegrin species, as at present recorded, to be 268.

The "special part" of the work which follows gives details as to the occurrence of the various species, and excellent field-notes on their habits. Some of the species of particular interest to the ornithologists of the West are such forms as *Hypolais pallida*, *Sitta neumayeri*, *Otocorys penicillata*, *Euspiza melanocephala*, *Falco feldeggii*, *Astur brevipes*, and *Pelecanus crispus*, which are never seen in Western Europe. It is curious that the occurrence of *Passer petronius* in Montenegro still rests on the authority of the late Lord Lilford, who observed it in August 1857, when riding up from Rijeka to Cetinje (*cf.* *Ibis*, 1860, p. 137).

Coloured figures of *Falco feldeggii* (♂ ad. et ♀ jr.) and *Astur brevipes* (♂ ♀ et pull.) illustrate this attractive volume—for which the best thanks of all ornithologists are due to the energetic authors.

54. *Richmond on Birds from Central Asia.*

[Catalogue of a Collection of Birds made by Dr. W. L. Abbott, in Eastern Turkestan, the Thian Shan Mountains, and Tagdumbash Pamir, Central Asia, with Notes on some of the Species. By Charles W. Richmond. Proc. U.S. Nat. Mus. xviii. p. 569.]

The collection recently made by Dr. Abbott in Eastern Turkestan, the Thian-Shan Mountains, and the Tagdumbash Pamir, and presented to the U.S. National Museum, contains 210 finely prepared specimens, which represent 98 species. In his account of them Mr. Richmond, as in the Catalogue of Dr. Abbott's Cashmir birds (*cf.* *Ibis*, *suprà*, p. 129),

follows the order of Dr. Bowdler Sharpe's Report on the birds of the Second Yarkand Mission.

Mr. Richmond distinguishes a pale form of the Tree-Sparrow from Yarkand as *Passer montanus dilutus*, a new form of Blackbird as *Merula merula intermedia* (!), between (what we should call) *Turdus merula* and *T. maximus*, from Turkestan, and a new Plover (*Ægialitis pamirensis*, distinguishable from *Æ. mongola* by its black front) from the Tagdumbash Pamir. Other interesting species of which specimens were obtained were—*Carpodacus rhodochlamys* from the Thian-Shan, *Pyrrhospiza longirostris* from the Pamir, *Phasianus shawi* from Kashgar, and *Ibidorhynchus struthersi* from Turkestan.

55. Richmond on a new Ant-Thrush.

[Description of a new Species of Ant-Thrush from Nicaragua. By Charles W. Richmond. Proc. U.S. Nat. Mus. xviii. p. 625.]

Mr. Richmond separates from *Phlogopsis macleannani* of Panama and Veragua the Nicaraguan form, *P. saturata*, sp. nov., as "considerably brighter and richer in colour on the underparts, back, rump, and wings."

56. Richmond on Birds from Alta Mira, Mexico.

[Partial List of Birds collected at Alta Mira, Mexico, by Mr. Frank B. Armstrong. By Charles W. Richmond. Proc. U.S. Nat. Mus. xviii. p. 627.]

This list contains the names of 60 species of birds of which specimens were obtained by Mr. Frank B. Armstrong at Alta Mira, near Tampico, on the west coast of Mexico, and sent to the U.S. National Museum for identification. They belong mostly to well-known species, but the list will be useful for the study of distribution. One adult male of *Geothlypis flavo-velatus*, Ridgw., was among them.

57. Robinson on the Birds of Margarita Island.

[An Annotated List of Birds observed on Margarita Island, and at Guanta and La Guayra, Venezuela. By Wirt Robinson. Proc. U.S. Nat. Mus. xviii. p. 649.]

Acting on a hint given in this Journal (*Ibis*, 1895, p. 172), First-Lieutenant Wirt Robinson resolved to visit Margarita

Island in the summer of 1895, and arrived at the Venezuelan port of La Guayra by steamer from New York on June 20th, and, after a short delay there, at Porlamar, in Margarita, on June 30th. Margarita, only some 17 miles distant from the nearest point of the opposite mainland, is about 42 miles long and $20\frac{1}{2}$ miles across at its greatest breadth. It consists of two portions, united by a narrow isthmus. In the western part some almost barren peaks attain a height of 2300 feet. In the eastern portion the mountain rises to a central peak of 3240 feet in elevation, and, being constantly enveloped in clouds, gives birth to numerous streams, which irrigate the southern slopes of the island. On these quantities of fruit, sugar-cane, and corn are raised, while behind the cultivated lands are heavy forests.

Lieut. Robinson collected near Porlamar for eight days, and then moved to El Valle, in the cultivated district, where he spent a week, returning to Porlamar on July 15th, and leaving the island on the 20th. During his 16 days' collecting he obtained 200 birdskins, getting specimens of nearly every land-bird observed, except the two Vultures and the Caracara.

Of the 73 species included in Lieut. Robinson's list, 11 have been discriminated by Mr. Richmond as new. But they are all close allies of Venezuelan forms, and their claims to separation appear in most cases to be extremely slender. In fact, it is plain that the avifauna of Margarita has been wholly derived from Venezuela, and that no purely Antillean forms are found there.

Butorides robinsoni (sp. nov.) is "closely related" to *B. striata*; *Eupsychortyx pallidus* is so near to *E. sonninii* as "not to require a separate description"! In the same sort of way *Leptoptila insularis* replaces *L. verreauxi*, and *Scardafella ridgwayi* *S. squamosa* of Venezuela. The remaining (so-called) new species are named *Speotyto brachyptera*, *Doleromyia pallida*, *Amazilia aliciae*, *Dendroplex longirostris*, *Quiscalus insularis*, *Cardinalis robinsoni*, and *Hylophilus griseipes*. The points of their distinctness appear in most cases to be hardly more decided.

Lasts of 18 species of birds observed at Guanta, in Venezuela, and of 35 identified at La Guayra, are added to the present paper. It is quite evident that Lieut. Robinson is a most enterprising and diligent collector and observer, but we are not quite satisfied as to the "new species."

58. *Salvadori on Birds from Deli, Sumatra.*

[Catalogo di una Collezione di Uccelli delle vicinanze di Deli in Sumatra. Per Tommaso Salvadori. Bull. Mus. Zool. Torino, xi. no. 250.]

The examination of a collection of birds from Deli, on the S.E. coast of Sumatra, has enabled Count Salvadori to add four new species to the avifauna of that island. The collection, which was sent for examination to Count Salvadori by Prof. Collett, of Christiania, contained altogether examples of 109 species.

59. *Seebohm's Eggs of British Birds.*

[Coloured Figures of the Eggs of British Birds, with Descriptive Notices. By Henry Seebohm. Edited (after the author's death) by R. Bowdler Sharpe, LL.D. &c. Sheffield: Pawson & Brailsford, 1896.]

A very short examination of Seebohm's figures of the eggs of British birds is sufficient to convince us that we have here to deal with a work of genuine merit, and that, as the editor says in his preface, it is not necessary to go to Germany for good chromolithography. The 59 coloured plates are beautifully printed on tinted backgrounds. The names of the birds are given in clear type under every figure, so that it is not necessary to refer to the text for their identification. The accompanying letterpress gives a concise account of the range, mode of occurrence in Great Britain, and breeding-habits of each species, prepared in our lamented friend's well-known style.

Dr. Sharpe contributes a memoir of the author, mainly written from personal reminiscences, besides a preface and the general supervision of the text, which he believes to be presented to the public nearly as the author "would have wished it to be issued." The result, in our opinion, forms an excellent memorial of the deceased: nothing more suitable

could have been devised for a man whose whole soul was in birds and eggs. The volume is creditable alike to the author, the editor, and the publishers, who have evidently spared neither trouble nor expense in its preparation.

60. Sharpe's '*Monograph of the Paradiseidæ*.'

[*Monograph of the Paradiseidæ*, or Birds of Paradise, and *Ptilonorhynchidæ*, or Bower-Birds. By R. Bowdler Sharpe, LL.D., F.L.S., &c. Part VI. Folio. London: H. Sotheran & Co., 1896.]

The sixth part of the *Monograph of the Paradise-birds* (dated 1896, but not delivered at the Zoological Society's Library until Jan. 1st, 1897) contains ten beautiful plates of the following species:—

<i>Craspedophora mantoui</i> .	<i>Diphyllodes seleucides</i> .
<i>Lamprothorax wilhelminæ</i> .	<i>Paradisea raggiana</i> .
<i>Epimachus ellioti</i> .	<i>Xanthomelus ardens</i> .
<i>Ianthothorax bensbachii</i> .	<i>Loria mariæ</i> .
<i>Diphyllodes magnifica</i> .	<i>Ptilonorhynchus violaceus</i> .

Of these, the newly-discovered forms *Lamprothorax* and *Ianthothorax* are, perhaps, the most noticeable. The latter has not been previously figured.

It is announced that, owing to the discovery, during the last two years, of several magnificent new species of Birds of Paradise, it has been found necessary to extend the present work to eight parts, instead of six, as originally intended.

61. *Swann on British Birds*.

[*A Concise Handbook of British Birds*. By H. Kirke Swann. 12mo. London, 1896.]

This compilation is wanting in system and plan—some rare species, e. g. *Saxicola stapazina* and *S. deserti*, being described in full, while on the same page *S. isabellina* is merely named, without a line to enable the novice to identify it. All the Corvidæ are described except the Nutcracker; the Short-toed and the Siberian Larks are merely named; while among the Sandpipers and the Ducks description

seems to be a matter of pure chance. As regards his geographical distribution, the author appears to have followed, as a rule, a tolerably safe pilot; but sometimes he ventures upon a little compression of his own and falls into error. For instance, he gives "Southern Europe" as the habitat of the Rock-Thrush, a bird which breeds on the Continent as far north as the latitude of London.

XXII.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed "to the Editors of 'The Ibis'":—

SIRS,—I have had a poor season for collecting this year, as business has occupied all my time, but I spent one interesting day in a salt-marsh. *Trupialis militaris* bred here this year in considerable numbers; the nests (similar to those of *T. defilippii*) were placed under tufts of high grass on high land, and well concealed. The eggs are three in number, large in size, and of a bluish white speckled with pale purple or reddish, and blotched or lined with dark purple or reddish. The Shoveler of this country (*Spatula platalea*) nests on high ground, but close to the water; the nest is well concealed among herbage, and composed of dry grass lined with down. The eggs are seven in number, elongated in shape, and of a creamy colour. *Elanus leucurus* was uncommon, but a few, probably birds of last year, remained here during October. *Gelochelidon anglica*, of which I sent home an adult specimen in September (see above, p. 169.—EDD.) I found breeding here this season. Its nest consists of a slight hollow in the ground, where it has trampled down the coarse grass. The eggs are three in number, large for the size of the bird, and of an olive, or grey, or yellow-brown colour, spotted and blotched with brown and light and dark grey.

In an extensive but shallow salt lake, dotted with numerous grassy islands and mudbanks, I and a friend spent an interesting afternoon. On the largest mudbank were many nests of the South-American Flamingo (*Phœni-*

*copterus ignipalliatu*s), all huddled together, made of mud, 18 inches high, and rounded like a pillar, with a basin at the summit. There were 500 Flamingoes flying or wading about. All the other mudbanks and a few islands were crowded with nests of *Larus maculipennis* and their young in hopeless confusion. Further on we found the grassy islands occupied by *L. cirrhocephalus* and an occasional Shoveler and Pintail Duck, and the furthest island was crowded by innumerable Terns, screaming and fluttering over their nests, which are placed close to each other. Judging by the many addled and scattered eggs, they must disturb each other enormously. It was curious to note how all the species of Gulls and Terns, although nesting together, keep each to their corner, and do not allow the others to trespass on their breeding-spot.

Yours &c.,

A. H. HOLLAND.

Estancia Sta. Elena, Halsey,

F.C.O., Buenos Ayres,

January 27th, 1897.

SIRS,—You will know the name of a countryman of mine, Mr. B. Schmacker, from several papers written by Mr. Styan in 'The Ibis.' Now, this gentleman has recently died in Japan, and has left his splendid collection of Chinese birds to the Bremen Museum. Of about 760 specimens nearly 300 are the originals of Mr. Styan's descriptions, as, for instance, the rare and unique *Arboricola ardens*.

The remainder, more than 400 specimens, have been confided to my care and study, to be named and catalogued. Perhaps this information may be acceptable to the readers of 'The Ibis.'

Yours, &c.,

G. HARTLAUB.

Bremen,

March 3rd, 1897.

New Experiments on Protective Coloration.—At the meeting of the American Ornithologists' Union, held at

Cambridge, Mass., on Nov. 10th, 1896 (as we learn from 'Science'), Mr. Thayer showed the following curious experiment. He placed three sweet potatoes, or objects of corresponding shape and size, horizontally on a wire a few inches above the ground. They were covered with some sticky material, and dry earth from the road on which they stood was sprinkled over them, so that they would be the same colour as the background. The two end ones were then painted white on the underside, and the white colour was shaded up and gradually mixed with the brown of the sides. When viewed from a little distance, these two end ones, which were white below, disappeared from sight, while the middle one stood out in strong relief, and appeared much darker than it really was. Mr. Thayer explained that terrestrial birds and mammals which are protectively coloured have the underparts white or very light in colour, and that the colour of the underparts usually shades gradually into that of the upper parts. This is essential in order to counteract the effect of the shadow, which otherwise, as shown by the middle potato, makes the object abnormally conspicuous, and causes it to appear much darker than it really is. In the case of Mr. Thayer's experiment, some of the witnesses could hardly believe that the striking difference in the visibility of the three potatoes was entirely due to the colouring of the underside, and Mr. Thayer was asked to colour the middle one like the two others, in order that the effect might be observed. Mr. Thayer complied with the request, painting the underside of the middle potato white, and shading the white up into the sides, as in the case of the others. The effect was almost magical. The middle potato at once disappeared from view. A similar experiment was tried on the lawn. Two potatoes were painted green, to resemble the green of the grass above which they were suspended. One was painted white on the underside, and at once became invisible when viewed from a little distance, while the other showed plainly and seemed very dark, the shadow, superadded to the green of the underside, making it remark-

ably conspicuous. The experiments were an overwhelming success.

The Rosy Bullfinch in Holland.—Mr. Blaauw writes to us that at a recent bird-show held at Utrecht he saw a living female (or young male) of the Rosy Bullfinch (*Carpodacus erythrinus*) exhibited. This bird had been captured in a net near Zwolle on Nov. 12th, 1896. This is the third recorded occurrence of the Rosy Bullfinch in the Netherlands.

The Chaffinch of Timbuctoo.—We have all heard of the Cassowary of Timbuctoo, but it has remained for a learned French traveller, who has recently visited that city, to discover a Chaffinch there. This is how M. Dubois describes the bird in 'Timbuctoo the Mysterious,' as he sits in the veranda of his hired house looking over a courtyard, and "chaffs" with his native friends:—

"Chaffinches with red throats and tails, and the lively little lizards who shared the apartments with me, joined the party. They frolicked in our midst with the utmost effrontery. The lizards ran about all over my guests, and the birds flew round them, fluttering and singing incessantly. No one but myself took any notice of them, however, so accustomed is Timbuctoo to their numbers and caprices."

Now what is the "Chaffinch" of Timbuctoo? Probably *Emberiza saharae*? Now that our neighbours on the opposite side of the Channel have taken possession of Timbuctoo we should like to have from them rather more definite information about its birds.

The "Operculum" in Ratite Birds.—In a recent number of 'Nature' (vol. liii. p. 279) attention is called to the discovery by Prof. Nasonow (Zool. Anz. xviii. p. 487) of an operculum in *Struthio*, and to the fact that the same structure had been previously noticed in *Apteryx* by Prof. T. J. Parker (Phil. Trans. 182 B, p. 31). This "operculum" is a fold of skin which grows over and gradually obliterates the embryonic gill-clefts in the Amphibia. Prof. Parker justly observes in the paper cited that "the retention of so

obviously amphibian a character as the opercular fold in the embryo of *Apteryx* appears to be a feature of very considerable morphological importance." He had not met with any record of its occurrence in other Sauropsida. It is well known that the late Prof. W. K. Parker dwelt in later years more upon the amphibian than the reptilian characters of birds; he compared, for instance, the curious "os uncinatum," connecting in a few types the ectethmoids with the palatine, to the attachment in the tadpole of the palato-pterygoid cartilages with the skull. These facts seem to favour this attitude with regard to birds, and to emphasize the low position in the series of the Struthious division.

The Parasitism of Cassidix oryzivora.—Dr. Goeldi (in reply to the remarks made, 'Ibis,' 1896, p. 586) calls our attention to the fact that he has already indicated the parasitic habits of *Cassidix oryzivora* in his 'Aves do Brasil' (p. 284). The "Meiro," as it is called in the Serra dos Orgãos, he there states, introduces its eggs into the nests of other birds, and does not incubate itself. Moreover, in December 1892, a nest and two young birds were brought to him as belonging to the "Japu," *Ostinops cristatus*. He remarked that one of the fledglings had no yellow in the tail-feathers. As the birds grew older it became manifest that one of the supposed "Japus" was a young *Cassidix oryzivora*, while the other was that of *Ostinops cristatus*. Dr. Goeldi has also sent us an article containing further particulars on this subject, which we shall publish in 'The Ibis' for July. In the meanwhile we may state that there can be no doubt that the priority of the discovery of the parasitism of *Cassidix* rests with Dr. Goeldi.

The Generic Name of the Swifts.—As is well known, *Micropus* (although in use for a genus of plants) has of recent years been put forward by some systematists as the correct generic term for the Swifts, to be used instead of *Cypselus* (see our remarks, 'Ibis,' 1894, p. 131). It appears,

however, that *Micropus* is not likely to enjoy a long reign. In the last number of the 'Ornithologische Monatsberichte,' Dr. Reichenow advocates a return to the still more ancient term *Apus*, of Scopoli, for the Swifts. *Apus*, of Scopoli (1777), has hitherto been passed over, because it has been stated that the same name had been proposed by Pallas in 1776 for a genus of Crustacea. But it now seems that this was an error, and that the term *Apus* is not to be found in Pallas's writings. It was used by Schäffer in 1756, but that was in pre-Linnean days, and does not bar its subsequent employment. The advocates of unmitigated priority will therefore, no doubt, proceed to call the Common Swift "*Apus apus*," and the family "Apodidæ": Dr. Reichenow suggests "Macropterygidæ," but we do not see how this could be justified. We venture the opinion that it would be more reasonable not to change the name *Cypselus*, which has been in constant use for the Swifts for many years, and is certainly neither the name of a plant nor of a Crustacean. We all know what is meant by "*Cypselus*," and this is the earliest name for the Swifts to which there is no serious objection.

XXIII.—Obituary.—Herr H. GÄTKE, Major C. E. BENDIRE,
and WILLIAM GRAHAM.

HEINRICH GÄTKE.—WE greatly regret to announce the death, on January 1st, of this distinguished Honorary Member of the British Ornithologists' Union, in his home on the Oberland, in sea-girt Heligoland, at the advanced age of 84.

Herr Gätke was born on the 19th of May, 1813, in a small town of the Mark of Brandenburg, and it was his desire to become a marine painter which first induced him to visit the island, where eventually he married and settled down for the remainder of his life. Subsequently, during the time of the English occupation, he held an important official post under the Governor. It was his outdoor work as a painter which brought him into touch with the

marvellous variety of bird-life periodically visiting the island, especially during the vernal and autumnal migrations. The frequent sight of so many strange and beautiful birds induced him first to commence a small collection; then came a great desire to know all about his specimens, whence they came and whither they went; and so his study of ornithology began and grew into a passion, and was persevered in for fifty years. For during this time he was rarely absent from the island. He had, however, one most memorable visit of two months—September to November—to Edinburgh and Scotland, the memory of which remained very fresh to the end of life, and he often spoke or wrote of the great silent hills and the leagues of purple heather.

From his copious notes and diaries, the accumulation of over fifty years, he wrote his remarkable book '*Die Vogelwarte Helgoland*,' the value and importance of which to students of migration it is difficult to overrate. In 1874, when the writer first made Herr Gütke's acquaintance, this had already made considerable progress, but it was not till sixteen years later, in May 1890, that the last line was written. The first and German edition, under the editorship of his friend and countryman, Professor Rudolph Blasius, was published at Brunswick in 1891, and the excellent English edition and translation at Edinburgh in 1895, every line of this being revised and corrected by the author. This indeed was a matter for congratulation, for very shortly after a serious attack of influenza he became partially disabled by the disease—paralysis—which carried him off sixteen months later.

Before 1874 Herr Gütke knew little of English ornithologists or their work. In '*The Ibis*' for 1862, p. 58, appeared a translation of a paper by Dr. Blasius in connection with the most noteworthy captures on the island, originally published in '*Naumannia*' (1858, p. 803). There was also a list contributed by Gütke himself to the '*Edinburgh New Philosophical Journal*' (new series, ix. p. 333), and this comprised almost all the ornithological information on Heligoland that was known in England. His library in 1874 was very limited,

and his chief books of reference were Brehm's 'Lehrbuch der Vögel Europas,' and the great work of the two Naumanns, father and son, 'Naturgeschichte der Vögel Deutschlands,' a book which he constantly used and referred to in his writings. From this year (1874) many eminent ornithologists visited Heligoland and made the acquaintance of Herr Gätke and his unique collections of migratory birds, butterflies, and moths. Several English friends who sympathized with his work sent over some of the best English literature connected with ornithology. Nor was the American brotherhood backward; so in time he became possessed of an excellent working library, which was of much use and value in helping him to complete his book.

Gätke spoke and wrote English perfectly, and for twenty-two years kept a regular correspondence and interchange of notes on migration with the writer. His last letter is dated December 20th, 1895, and briefly conveys Christmas greetings, concluding with regrets that he is not longer able to hold the pen in his feeble hands. His letters, like his book, are full of beautifully-expressed thoughts and word-paintings in connection with his favourite subjects, while the occasional pen-and-ink sketches all indicate the skilful artist. He was always ready and willing to impart his knowledge, and never weary of talking about his charming little visitors, the pilgrims over that great mysterious *Zugstrasse*. How well we recollect the delight with which the veteran naturalist at our last visit pointed out the recent specimens added to his collection, ranged all round the walls of his large, well-lighted studio, and then, stepping out into the pretty garden, famed for its roses, he pointed out the spots where some of his chief treasures had appeared. "On that pole *Emberiza rustica* perched; near there I caught my beautiful male *E. pityornis*; to the right of that highest willow, *Turdus varius* and *T. fuscatus*; *Emberiza melanocephala* I have repeatedly shot with my walking-stick gun; *E. luteola*, *Phylloscopus nitidus*, *P. fuscatus*, *P. viridanus*, *P. superciliosus*, and *P. tristis*, all within a very limited space." The kind owner of this treasure-plot never tired of

pointing out the wonders of his small demesne. Then we were conducted to the high plateau of the Oberland, with a sea-horizon in every direction, and again the marvellous story of bird-life was repeated ; almost every yard of the land, and each ledge, nook, and corner of the precipitous coastline, seemed linked with the memory of some far-travelled rarity.

In appearance Gätke was a man of fine carriage, very upright, and considerably over six feet in height. He had a finely-formed head, and none could know him without being struck with his noble presence. His cast of features reminded us of the portraits of 'Christopher North.' Notwithstanding his knowledge and experience, he was a man of great modesty, and never decried or undervalued the labours of his brother-workers. In one of his letters, speaking of migration, he says : " We may in time learn something of the How and When ; but as for the Why, that must ever remain an unsolved problem, till you and I launch out to the unknown shore, or manage to learn the language of the birds, and be told in their own tongue." At the time of his death Gätke was corresponding and honorary member of several scientific societies in England, Europe, and America. His collections remain on the island, and have now become the property of the German Government. Gätke has made Heligoland classic ground, and, so long as ornithology has an existence, the old storm-beaten crag will be associated with his name, rather than remembered as the island-fortress ceded by England to Germany.

In looking through Gätke's letters we were struck with the following passage, which seems now as applicable to himself as it was to the great naturalist to whom it referred :— " And Darwin has gone to rest too ; not many who have left so broad a mark behind as he, and fully deserved by so long a life of such earnest toil in so grand a vineyard."—J. C.

CHARLES E. BENDIRE, Major in the Army of the United States, died at Jacksonville, Florida, on the 4th of February last. A relative of Weyprecht and Payer, the discoverers of

Franz Joseph Land, Bendire was born in Hesse Darmstadt in 1836, went to America in 1852, and entered the United States Army in 1854; after which, till his retirement in 1886, he was almost continuously on frontier service at remote or inaccessible outposts. Apart from the reputation he acquired in Indian warfare, he was a well-known explorer, laid out many roads and surveyed routes for telegraph-lines, while as a naturalist no American of this half century has spent half so much time in the field or made such voluminous and accurate notes.

Bendire contributed several letters to the 'Bulletin of the Nuttall Ornithological Club,' and in 1877 he published an important paper on the Birds of South-eastern Oregon; but his great work is undoubtedly the 'Life-Histories of North-American Birds,' the second volume of which we have noticed on p. 268 of this part. He was an extremely popular man, and his death is deeply regretted; by no one more than by Dr. C. Hart Merriam, from whose obituary notice in 'Science' we have taken much of the foregoing. But as showing the character of the man, and the kind of experiences he met with when collecting, we cannot do better than give an extract from vol. i. of the above work (pp. 231-232), in which Bendire describes the finding of the first nest then known of *Buteo abbreviatus*, the Zone-tailed Hawk. On April 22nd, 1872, he had found one egg in the nest, and, as he naturally wished to obtain another, he paid a second visit to the locality on May 3rd:—

"As the bird appeared so very tame, I concluded to examine the nest before attempting to secure the parent, and it was well I did so. Climbing to the nest I found another egg, and at the same instant saw from my elevated position something else which could not have been observed from the ground, namely, several Apaché Indians crouched down on the side of a little cañon which opened into the creek-bed about 80 yards further up. They were evidently watching me, their heads being raised just to a level with the top of the cañon. In those days Apaché Indians were not the most desirable neighbours, especially when one was

up a tree and unarmed ; I therefore descended as leisurely as possible, knowing that if I showed any special haste in getting down they would suspect me of having seen them. The egg I had placed in my mouth as the quickest and safest way that I could think of to dispose of it—and rather an uncomfortably large mouthful it was, too ; nevertheless I reached the ground safely, and, with my horse and shot-gun, lost no time in getting to high and open ground. I returned to the place again within an hour and a half, looking for the Indians, but what followed has no bearing upon my subject. [There is a grim suggestiveness in this remark.] I only mention the episode to account for not having secured one of the parents of these eggs. I found it no easy matter to remove the egg from my mouth without injury, but I finally succeeded, though my jaws ached for some time afterwards.”

WILLIAM GRAHAM, of Gartmore, and of the Manor House, Crayford, Kent, died on March 12th, at the age of forty-seven. In early life he had some experience of sheep-farming in New Zealand, and on his return he devoted to sport and natural history as much time as could be spared from business. Accounts of excursions to the Scilly Islands, the Farnes, and the Bass Rock are to be found in the ‘*Trans. Norfolk and Norwich Naturalists’ Society*,’ but from the pen of Mr. Bidwell, for Graham disliked writing. He was partial to duck-shooting in Holland ; while, as a good fisherman, his practical knowledge led to his being appointed Chairman of the National Sea-Fisheries Committee. Elected a Member of the B. O. U. in 1886, and one of the original Members of the B. O. C., at the Meetings of which he was a constant attendant, Graham was well known and deservedly popular. It was only on the 21st of last January that he was presiding as Prime Warden of the Fishmongers’ Company at a dinner, the principal feature of which was the presence of a large proportion of explorers and scientific men, especially ornithologists ; and his genial personality will be much missed at our gatherings.

THE IBIS.

SEVENTH SERIES.

No. XI. JULY 1897.

XXIV.—*Field-Notes on the Birds of Chili.* By AMBROSE A. LANE. *With an Introduction and Remarks by P. L. SCLATER*.*

[Concluded from p. 195.]

89. COLUMBA ARAUCANA, Less.

Columba araucana, Salvad. B. M. C. xxi. p. 296.

(Calle-calle.)

I did not see much of this species in Central Chili, though I observed it once in a wooded and secluded glade on the hills near Hospital, where I was told a pair nested. The birds were said to come in flocks there in the cold season. In the south I found them plentiful, especially about Valdivia and Rio Bueno. In Arauco they are fairly numerous, but not so much so as in the former places. They probably extend far south.

These Pigeons nest at Rio Bueno about December. The nest is a loose structure of sticks, like that of the Qucest; and one I got was in the fork of a tree about 15 feet high. Their cooing was a deep booming sound.

They are generally known as the "Torcaza."

* [The localities given after the names of the species in brackets are those of Mr. Lane's specimens, which are now in the British Museum.—P. L. S.]

The iris of this Pigeon is a double ring, the outer section being cadmium-yellow, and the inner orpiment-orange. The bare skin round the eye is Indian purple, marked with a delicate network of pomegranate-purple. The tarsi and feet are of a brilliant poppy-red, the bill and claws black.

90. *ZENAIDA MACULATA* (Vieill.).

Zenaida auriculata, Salvad. B. M. C. xxi. p. 384.

(Hacienda Mansel, Rio Pilmaiguen, and Rio Bueno.)

This Dove is very plentiful throughout Central Chili. I saw only a few near Concepcion on going south in June (1890), when it was mid-winter there, and further south I found it only occurred as a summer visitant.

It arrived at Maquegua (as a summer visitant) about the end of August. On going to Valdivia in September I did not find it there, nor in any other locality I visited until I got to Rio Bueno, where it was plentiful on the banks of the rivers, on the margins and pebbly beaches of which it constantly appeared to be feeding.

In Central Chili it breeds from November to December, and at Rio Bueno from Christmas till March.

The nests are like that of the European Turtle-Dove; those I found at Rio Bueno being usually placed in a thick bush or the fork of a tree overhanging or standing in water.

I got a young bird to rear in January, 1891, at Rio Bueno: we took it from a nest in a "quila" whilst going along the Rio Conta in a boat; but soon after we were shipwrecked on a rapid, and all my specimens, and most of my clothes, were swept away. I subsequently got a pair from another nest, but they were too young and I could not get them to thrive; they died in consequence after I had had them a week.

91. *METRIOPELIA MELANOPTERA* (Mol.).

Metriopelia melanoptera, Salvad. B. M. C. xxi. p. 497.

(Lalcalhuay, Tarapacá.)

This Dove occurs at Huasco, Sacaya, and other localities in Tarapacá; I only observed it between 8,000 and 12,000 feet. On first going to Huasco in January I noticed

one or two flocks of upwards of a dozen on the sierras, but subsequently I met with only odd pairs, and they were scarce.

[Mr. Lane also procured examples of *M. aymara* at Huasco. See B. M. C. xxi. p. 500.—P. L. S.]

92. *CHAMÆPELIA CRUZIANA* (d'Orb.).

Chamæpelis cruziana, Salvad. B. M. C. xxi. p. 483.

(Pica.)

This handsome little Dove is to be seen everywhere at Pica, in gardens, streets, corrals, &c. It is known as the "Palomita" or "Tortolita." I found a nest on top of a post supporting the wall of a shed in a garden; as the whole structure was a mere wicker-work arrangement, intended only as a shelter from the sun, the birds found no difficulty of passage through the interstices of the roof. The nest was a mere platform of stalks or grass, and contained two newly hatched young, so I did not disturb it. I believe that this Dove nests more commonly in the forks of trees or shrubs.

93. *RALLUS SANGUINOLENTUS*, Sw.

Rallus rhytirhynchus, James, New List, p. 10.

Limnopardalus sanguinolentus, Sharpe, B. M. C. xxvii. p. 30.

This bird occurs through Central and Southern Chili in all suitable localities, but is much more plentiful in the south. It is also common on Chiloe, and probably right down to the Straits of Magellan. It is called "Piden" throughout Central Chili and also in the southern provinces, but in the latter is better known as "Gallereta." It appeared to be a resident in all these districts.

The iris is of a dark crimson colour. In the living bird the bill is coloured at the base above Sevrès blue, and beneath vermilion, the rest of it being oil-green. The legs and feet are geranium-pink, deeper on the fronts; the claws black.

This Rail is always to be found in swampy ground, where there is abundance of sedge or rushes.

I noticed a good many on the flats near the mouth of the

Maquegua River in Arauco, these localities being flooded by the tide at high water. Owing to its retiring habits it is not often seen, but may be frequently heard, especially when night approaches. The cry is loud and remarkable; I never, to my knowledge, heard the cry of the Water-Rail at home, so I do not know if that is like it. It commences with a deep rumbling sound ascending to a whistling shriek; this extraordinary sound is repeated two or three times, and the deep rumbling gradually dies away. When I first heard it I was probably within ten yards of the bird, and thought the noise was made by some amphibious mammal, such as an otter, until I was assured by a native that it was produced by a bird. When I went down to Arauco I heard these Rails often enough, sometimes dozens of them together, making a noise that was audible a long way off.

I also obtained at Pica a peculiar small variety of this Rail. It was, so far as I could ascertain, of the same colour in every respect and had the same cry, the only difference apparent being the size.

These Rails occurred in limited numbers in reeds or bushes by the water-courses at Pica; but the covert was so thick I do not believe even a good dog could drive them into view; I was lucky in getting even one specimen, although I was continually watching during my limited stay.

94. PORPHYRIOPS MELANOPS (Vieill.).

Porphyriops melanops, Sharpe, B. M. C. xxiii. p. 182.

I heard of this species only about Valdivia, where it occurs in the dense thicket which generally covers the banks of the rivers running through forest districts. It is perhaps not uncommon, but it is difficult to get birds in such localities, or even to observe their habits, and I only identified this one specimen, though I thought I saw more.

† 95. GALLINULA GALEATA.

Gallinula galeata, Sharpe, B. M. C. xxiii. p. 180; *Scl. P. Z. S.* 1891, p. 136.

(Sacaya.)

This bird is by no means uncommon in the marshes of Sacaya, but is very different in its habits from the Coots.

It is locally known as the "Llagareto," and nests in rushes, sedge, &c., laying about five eggs in January or February. This Water-hen is a very hard bird to shoot, as it is a most extraordinary skulker, and on being sighted it creeps into a tuft or bush, which the gunner naturally approaches and examines cautiously, but seldom flushes the bird, though he may see it walking about a hundred yards away quite unconcernedly. In this way, even when assisted by a couple of keen-eyed natives, one of these birds has completely deluded me from spot to spot. It will be found as frequently on the drier parts of the valley as on water; but I never saw more than a pair together, nor did I find it amongst the Coots which live in colonies. It occurs up to 11,000 feet. The sexes are of the same size, and the females appear to be of the same plumage as the adult male.

96. *FULICA GIGANTEA*, Eyd. et Soul.

Fulica gigantea, Sharpe, B. M. C. xxiii. p. 219; Sci. P. Z. S. 1891, p. 136.

(Sacaya.)

I only observed this fine Coot in Tarapacá, and even there it was very local, being confined to certain pools.

There was a small piece of marsh at Sacaya in the upper part of the valley with a few acres of water and a fair amount of sedgy grass about it. On this I found a colony of *F. gigantea* and *F. ardesiaca*; but I never saw them anywhere else but in this one spot, from which they appeared never to stray. The altitude of this place was nearly 11,000 feet.

The two species, when swimming on the ponds along with ducks and other birds, usually make a considerable clamour, some of their cries being most peculiar. On the ponds they occupied I observed about six nests, some of which were composed of materials enough to fill a horse-cart, the part above water being about 3 feet in diameter. I swam, or rather floated myself, over a layer of dirty black mud (which I found was covered only by about twelve inches of clear water and too deep and sticky to wade through) to visit these nests, but found no eggs, only broken shells. This was in January but later on I got an Indian to go to a nest which

was easier to reach, and obtained some eggs. I went to the spot again in March, thinking I saw eggs, but obtained none: however, later in April I found eggs containing young birds; these, I think, belonged to *F. ardesiaca*.

97. *FULICA ARDESIACA*, Tsch.

Fulica ardesiaca, Sharpe, B. M. C. xxiii. p. 217.

(Sacaya.)

This species measures about 16 inches long, bill to rictus 1·5; tail 3, containing two middle rectrices and five lateral on each side. The bill is sulphur-yellow, with a patch of hazel on the top of the culmen and continued up to the shield on the forehead. The legs and feet are oil-green, shading into sage-green in parts; the claws greenish-drab. Both this species and the preceding are termed "Machorita" by the Indian, from some fancied resemblance to the Llama, which they call the "Machora."

98. *FULICA LEUCOPTERA**.

Fulica leucoptera, Sharpe, B. M. C. xxiii. p. 224.

(Sacaya.)

The common Chilian Coot is known everywhere as the "Tagua," and occurs on all the lagunas and marshes throughout the central and southern provinces; it builds floating nests, and lays from five to eight eggs. The length of an adult is about 15 inches; bill (point to rictus) 1·3, (to top of shield) 1·75; tail 2·375, containing two middle rectrices and five on each side; wing 7·25; tarsus 2·375. The legs and feet are light olive-green, dark at the joints, with a touch of coral-red round the tibiae. The bill and shield are canary-yellow, with a patch of coral-red at the margin on the culmen.

99. *BELONOPTERUS CHILENSIS*.

Belonopterus chilensis, Sharpe, B. M. C. xxiv. p. 165.

(San Pedro and San Antonio.)

This Plover is common all through Central and Southern Chili, and its noisy and discordant screeching may be heard by anyone traversing flat or marshy ground. It is known in the central provinces as the "Queltregüe," and in the south

* [Besides these three species Mr. Lane obtained examples of *Fulica armillata* in Tarapacá. See B. M. C. xxiii. p. 219.—P. L. S.]

and Chiloe as the "Fraile." It is very similar to *V. vulgaris* in its nesting-habits, I was told, and lays four eggs of similar description.

100. *PTILOSCELIS RESPLENDENS*.

Vanellus resplendens, Selater, P. Z. S. 1891, p. 136.

Ptiloscelis resplendens, Sharpe, B. M. C. xxiv. p. 137.

(Sacaya and Sitani.)

I met this Plover only in Tarapacá, where it occurs at Huasco, Sacaya, and Cancosa, and is called by the Indians "Lequi-lequi." It closely resembles the former in its habits, and utters similar discordant cries when approached. I observed it from 8,000 to 12,000 feet, where it appeared to be resident. I was told that it nests on the open ground about December, laying four eggs.

101. *ÆGIALITIS OCCIDENTALIS*, Cab.

Ægialitis occidentalis, Selater, P. Z. S. 1886, p. 493, 1891, p. 137; Sharpe, B. M. C. xxiv. p. 295.

(Sacaya and Laraqueti.)

This handsome little Plover occurs in the Andes in wet salt-marshes, such as Huasco, where it is fairly numerous, and also at Cancosa. At Sacaya a few were found on the small stretch of brackish laguna in the upper part of the valley. The Indians there called it "Platerito." I observed it up to 11,000 feet, and it remained in the localities above mentioned up to the time I left.

A female which I measured was 6·5 inches long, bill to rictus ·75, tail 1·75, wing 5·5, tarsus 1, middle toe and claw ·75. Bill, legs, and feet black.

Iris dark brown.

102. *EUDROMIAS MODESTA* (Licht.).

Zonibyx modesta, Sharpe, B. M. C. xxiv. p. 238.

Observed in flocks or small groups on the beach near Arauco, in August.

+103. *HÆMATOPUS FRAZARI*, Brewster.

Hæmatopus frazari, Sharpe, B. M. C. xxiv. p. 117.

Hæmatopus palliatus, James, New List, p. 194.

(Arauco.)

I met with this species of Oyster-catcher, which is called

the "Pipilen" from its cry, only on the beach in Arauco in August. A male measured 17.25 inches; bill (to rictus) 3.5; tail 4.5, containing two middle rectrices and five lateral on each side; wing 9.5; tarsus 2, middle toe 1.5 (with claw), hind toe absent. Feet partially webbed.

Bill poppy-red at the base, merging into carmine, which assumes a bright transparent yellowish hue at the tip. Iris deep orange; cere poppy-red. Legs and feet flesh-colour, claws black.

104. *THINOCORUS RUMICIVORUS*, Esch.

Thinocorus rumicivorus, Sharpe, B. M. C. xxiv. p. 719; *Sci. P. Z. S.* 1891, p. 137.

This is one of the few species to be met with on the deserts of Tarapacá and in the similar parts of Northern Chili. It is indeed the only bird I observed in those sterile regions far from water and cultivation, though certain *Musisaxicoline* species appear now and then about the corrals and heaps of débris near habitations. In Tarapacá I found it occasionally from the sea-shore to within a short distance of Pica, and it perhaps ranges higher. It is, I was told, far more plentiful further south, especially about Huasco and Coquimbo; at the former place I was told it could be shot wholesale near the water-springs at certain hours. I could not make out much about these birds whilst in Tarapacá, as I found them very scarce, and nobody seemed to know much of them; but I had more experience of them later, which leads me to believe that they all probably visit water, and most likely grassy glades, somewhere in the neighbourhood that they inhabit, at certain intervals, even though they pass most of their time on the desert or bare sand.

They are called in the north "Perdicita" (= Little Partridge) or "Echadero" (from the reflective Spanish verb *echarse*, to stretch one's self at full length), from their habit of lying flat on the sand in some slight hollow on the approach of an intruder. Once or twice on the few occasions that I met with them in Tarapacá we dismounted and walked to where they were running when we last saw them (though I never

could mark them down with accuracy on the glaring sand which they so closely resemble), but after walking carefully and making close scrutiny we could find no further trace of them. I found small flocks of them subsequently on the wide beach extending from Laraqueti to Arauco; this was in August, and I was told that they occurred there only at that season. The natives had no regular name for them, calling them "Pollos (chickens) del mar," which name they also apply to the Plovers and other small Limicoline species. I did not hear of their occurrence further south.

The sexes are not quite similar in size, the female being a little smaller: she has also a more finely shaped head and gullet, and does not obtain the peculiar black marks on the throat and jugulum which distinguish the adult male, unless very slightly. The latter measures 5 inches long; bill (point to rictus) $\cdot 5$; tail $2\cdot 5$, containing two middle rectrices and five lateral on each side; wing $4\cdot 5$; tarsus $\cdot 675$, middle and hind toes $\cdot 675$ and $\cdot 125$ respectively. Bill saffron-yellow at the base, tipped with black. Legs and feet saffron-yellow, claws black.

On taking wing these birds utter a wheezing screech, much like that of a Snipe. When feeding they utter bubbling or cooing sounds, such as might be heard from Pigeons. Their flight is decidedly Snipe-like, from the similar structure of the wings.

I picked up, or rather captured, one of these birds which I had wounded out of a flock near Laraqueti in August 1890; the extremity of the radius in one wing was fractured, but as it did not appear much the worse I soon cured it by a small operation and kept it in a box, partly open and wired on one side, in order to study its habits. As it was moulting at the time it fell into such a low condition that it nearly died, but on being liberated now and then for ten minutes or so in a field it recovered. I brought it at first on to the beach, to try and find out its food on the bare sand; but though I saw it peck I never could tell exactly what it pecked at. In a garden or field it ate grass and various weeds with voracity, but I had to watch it carefully as it ran very fast, and always

tried to hide by flattening itself down in some hollow. In this way I nearly lost it once or twice, and often was near treading on it. I accustomed it by degrees to eat bread and canary-seed, but it did not take to the latter for some time. Before leaving Maquegua for good, I kept it for about a week in a pit in a garden. During this time I generally brought it in at night, and it remained quiet all day as it could not get out, and fortunately was not stolen; whilst as it had a good run and a plentiful supply of food, it thrived exceedingly well. It was never apparently wild or frightened, even when first caged, though it constantly pecked and hammered with its bill as if to get out. It continued this habit more or less and never got much tamer, nor would it feed from hand. However, it proved so interesting and was so easily kept that I brought it with me on moving south, and it went through a more marvellous amount of travelling than I should think ever came to the lot of a bird before. Though it got on well enough on the steamers, its occasional position on the jolting bullock-waggon was, I fear, unenviable; and, finally, I found it advisable to carry it in a little box in my saddle-bag to Rio Bueno; but even this did not affect it, and it continued to flourish until I foolishly trusted it in a cage with a specimen of *Glaucidium nanum*, which appeared too small to be offensive. But the Owl ate the head off the Quail-Snipe, after I had kept it safe for six months.

105. *THINOCORUS ORBIGNYANUS*, Geoffr. et Less.

Thinocorus orbignyanus, Sharpe, B. M. C. xxiv. p. 718; Scl. P. Z. S. 1891, p. 137.

(Sacaya, Cancosa, and Lake Huasco.)

These birds were plentiful about Sacaya, especially on grassy slopes near water, in which I have even seen them paddle. They occurred also at Huasco and Cancosa, and at all the springs in Tarapacá giving rise to verdure. The Bolivians call this bird "Puca-puca," probably from its gurgling or Snipe-like notes, which are similar in most respects—as are the general appearance and behaviour of this bird—to those of the

former species (*T. rumicivorus*). It also has the same habit of flattening itself on the sand to escape observation. It is larger than *T. rumicivorus*, an adult male measuring 8·25 inches long, bill ·675, tail 2·5, wing 5·5, tarsus ·875. The bill is deep chrome at the base, shading to broccoli-brown at the point. Legs and feet deep chrome, claws black. These birds become more voluble at times, especially at night, when their peculiar gobbling cry is frequently audible and somewhat like the drumming of a Snipe. They are usually met in small flocks, except when in the breeding-season, which is at its height during January and February. At Sacaya the nest is a mere hollow in the sand, with a few fragments of twigs or grass around. The eggs are four in number. These birds are mostly graminivorous in their feeding.

They occur generally on the Andes of North Chili as far as the peaks adjacent to Santiago, extending both sides from 8,000 to 14,000 feet, but south of this I got no authentic report of them.

106. *ATTAGIS GAYI*, St.-Hil. et Less.

Attagis gayi, Sharpe, B. M. C. xxiv. p. 715; Scl. P. Z. S. 1891, p. 137.

(Sacaya.)

Of this species I learned but little; it is called "Perdiz (Partridge) de la Cordilla," occurring, so far as I could ascertain, only on the elevated solitudes of the Andes from 5,000 to 12,000 feet.

Guided by an Indian, I sought it several times, but only once came on a flock or covey of about half a dozen near Sacaya, out of which I got the specimen sent. This was a female 12·25 inches in length, bill (point to rictus) ·875, tail 3·5, wing 7·125, tarsus 1·125; hind toe absent. The iris was cinnamon.

I was told that these birds lay five or six eggs of a deep purple colour, and that they are resident in flocks of from about six to ten, each flock frequenting one special locality, generally the head of some remote valley, where they are little disturbed.

They occur on the Andes adjacent to Santiago, but I did not hear of their existence further south.

107. *RECURVIROSTRA ANDINA*, Phil. et Landb.

Recurvirostra andina, Sharpe, B. M. C. xxiv. p. 334; Sci. P. Z. S. 1891, p. 137.

(Lake Huasco and Sacaya.)

This bird, so far as I could ascertain, is peculiar to the salt-marshes of the Bolivian Andes, at an elevation of from 8,000 to 12,000 feet. It was plentiful about Huasco, and a few occurred at Sacaya in one spot, which was a stretch of saltish sediment with from two to nine inches of water on it, but it never resorts to swamps or grassy slopes.

The sexes are similar in appearance, the female being, if anything, a trifle larger than the male. The latter is about 18 inches long, bill 3 (base to tip), tail 4. It has two middle rectrices, and five lateral each side. Wing 9.5 inches, tarsus 3.5, middle and hind toes 1.5 and .25 inch respectively; the latter is elevated about .375 inch. The feet are half-webbed; the legs and feet are lavender-grey; claws and bill black. The iris is scarlet.

The plumage is thick and well adapted to the rigorous cold of the Andes. The flesh is a deep red, and rank-looking, like that of the Flamingo and other birds which feed in the salt-marshes.

These Avocets appear to be residents where they occur, and I should say are strictly local. I was informed that they nest about November, on the shores of the water they frequent, laying four or five eggs. There are three chicks mounted in the Santiago Museum and two adult specimens. In the former the bills were, I think, straight or very slightly curved; they are of a light brown or drab plumage, with black spots or patches.

These birds are usually seen wading in the shallow lagunas, either singly or in small groups; when the latter is the case they usually are all facing in the same direction, and if they move they go forward. Keeping the same front, they make rapid peeks at the surface of the water in a diagonal

manner, appearing to skim something off the surface with their long slender bills; this seemed to be their only method of feeding, if such it was. At the same time their peculiar cry may be frequently heard. This cry is like that of a three-quarter-grown duckling, and might be expressed by the syllable *weng* pronounced with a shrill nasal accent, and is something like the note of the Ibis.

When disturbed they utter this note successively and sometimes rapidly, taking wing if a person approaches. The flight is steady and performed with rapid strokes of the wings, their long legs being kept straight back, so that the feet protrude beyond the tail.

The Bolivians call this bird the "Quaiti." The first specimen I fired at, at Huasco, continued its flight in an undisturbed manner, alighting about 300 or 400 yards away; when I got up to it I found it was quite dead, though I had not noticed it to waver.

108. GALLINAGO PARAGUAIÆ (Vieill.).

Gallinago paraguaiæ, Sharpe, B. M. C. xxiv. p. 650; Sci. P. Z. S. 1891, p. 137.

(Sacaya and Rio Bueno.)

This Snipe is fairly numerous in Chili, increasing in numbers as one goes south.

The average measurement of the males I shot was:—Length 11.25 inches; bill 2.75; tail 2.5, containing two middle rectrices and six lateral each side; wing 5.125; tarsus 1.25 inch; middle and hind toes 1.25 and .25 (including claws), the latter elevated about .375 inch. Iris dark brown; legs and feet a yellowish sage-green; claws blackish.

This Snipe was fairly numerous about Concepcion and thence to Arauco on the flat swamps by the sea from June to end of July; but by the middle of August it would have been hard to find one there. The birds were very numerous about the Rio Bueno and Rio Pilmaiguen, where they must breed. They are called "Avecasino" in Arauco, but about Rio Bueno they are best known by an Indian name "Quaiquaillen," (pronounced ki-ki-l'yen). They feed rather on open mudbanks or such-like places than in grass or sedge.

109. *GALLINAGO STRICKLANDI*, Gray.

Gallinago stricklandi, Sharpe, B. M. C. xxiv. p. 660.

I saw what I believe was this large Snipe at Huasco whilst stalking some Flamingoes; but as it appeared plentiful I did not fire at the time, because I should have lost my chance of getting near the latter, and subsequently I was so much occupied in procuring the various new birds with which I was surrounded that I forgot it. A nest and two eggs, which I believe belong to this Snipe, were brought to me at Sacaya during the first days I spent there. The nest consisted of grass. I got more of the eggs from the Indians, but at the time was ignorant as to the species to which they belonged, and did not understand the natives so well as later on; but afterwards I found out that the "Saje-saje grande" was the bird in question, as I subsequently shot the "Saje-saje-chica" (*Gallinago paraguaiæ*).

110. *RHYNCHÆA SEMICOLLARIS* (Vieill.).

Rostratula semicollaris, Sharpe, B. M. C. xxiv. p. 690. (Arauco.).

I procured a limited number of these handsome birds just before I left Arauco. They appeared to be in pairs and I flushed them from watery sedge near the sea-shore whilst looking for Snipe.

The female is slightly larger than the male, and the markings and white spots on back and wings appear more distinct, but little difference is observed on a casual inspection.

A female of a pair shot in the end of August had highly-developed ova, which looked as if they had come to breed in that locality. The legs evidently dangle during their somewhat low flight, as nearly all the specimens shot were more or less shattered in this respect.

† 111. *TRINGA MACULATA*, Vieill.

Heteropygia maculata, Sharpe, B. M. C. xxiv. p. 562; *Scl. P. Z. S.* 1891, p. 137.

I shot a specimen of this Wader near the river Pilmaiguen towards the close of February. It measured 8·5 inches long; bill 1·15, tawny olive at the base, shading darker, the outer

half being black; tail 2·5, wing 5·75, tarsus 1·5. The legs and feet were dark gallstone-yellow. I have no details by me of the larger *Tringa* which I got at Sacaya (Tarapacá), but this seemed to be similar*.

+112. *TRINGA BAIRDI*, Coues.

Tringi bairdi, Sel. P. Z. S. 1891, p. 137.

Heteropygia bairdi, Sharpe, B. M. C. xxiv. p. 570.

(Cancosa, Sacaya, and Lake Huasco.)

This species was plentiful at Huasco, Sacaya, and other places in Tarapacá until the end of March. Length 6·5 inches, bill ·9, tail 2·25, wing 4·5, tarsus ·75; bill, legs, feet, and eyes black.

The note is a soft whistling trill, uttered when the bird takes wing. The habits are similar to those of the common Sanderling.

+113. *TOTANUS MELANOLEUCUS* (Gm.).

Totanus melanoleucus, Sharpe, B. M. C. xxiv. p. 426.

I got a specimen of this species in the south near the river Pilmaiguen, in the middle of February. This bird, which was a male, measured 14 inches long; bill (to rictus) 2·35; tail 3·5, containing two middle rectrices and five lateral each side; wing 7·35; tarsus 2·8. Eye black; legs and feet deep chrome-yellow; claws black. Its local name is *Serapita*=*Zarapito*.

+114. *TOTANUS FLAVIPES* (Gm.).

Totanus flavipes, Sharpe, B. M. C. xxiv. p. 431; Sel. P. Z. S. 1891, p. 137.

Birds of this species are fairly plentiful at Huasco, Sacaya, and Caracosa, and other localities in Tarapacá, where they breed, probably about December. They may migrate altogether during the winter season, at least some do. They are known there as the "Chiuli-chiuli," which name is probably derived from the note of the bird, which is frequently heard.

They resort to the margins of pools and to shallow waters,

* [The larger *Tringa* of Tarapacá is also of this species. Cf. B. M. C. xxiv. p. 566.—P. L. S.]

and are peculiarly addicted to the habit (so characteristic of many Limicoline birds) of repeatedly jerking up the head and body.

+115. *NUMENIUS HUDSONICUS* (Lath.).

Numenius hudsonicus, Sharpe, B. M. C. xxiv. p. 364.

(Viña del Mar, near Valparaiso.)

This species occurs generally in flocks along the coast, migrating according to season. It is called by the natives "Perdiz del mar," or Sea-Partridge. Its habits are somewhat like those of the Common Curlew, but the whistle is not so loud.

[I find no MS. notes on three species of Gulls of which Mr. Lane obtained specimens, now in the British Museum: namely, *Larus serranus* (Hiasco and Sacaya), *L. maculipennis* (Viña del Mar, Arauco, and Laraqueti), and *L. glaucoptes* (Viña del Mar, Arauco, and Laraqueti). Cf. Saunders, B. M. C. vol. xxv.—P. L. S.]

+116. *PUFFINUS GRISEUS* (Gm.).

Puffinus griseus, Salvin, B. M. C. xxv. p. 386.

(Corral.)

On November 3rd, 1890, great numbers of these Petrels visited the bay at Corral, extended in a line of some miles in length. From a distance they presented a remarkable appearance, numbers being settled on the water, whilst the air above was full of them, flying in regular succession from the rear to the front of the column. On sculling out I found the line of those swimming was from a quarter to half a mile across. They were not swimming thickly together, but from one to three yards apart. I did not bag more than one to each shot I fired, as most of them were only wounded, and, as is usually the case, difficult to secure, and whilst I pursued one the rest got well away. The wounded birds, on being hauled into the boat, attacked everything most ferociously with their bills, not only biting and worrying oars and cordage, but even each other, screaming and tearing out each other's feathers wholesale, so that before I got time to kill them outright some of them had nearly plucked the others. They varied in size, a male measuring 18·5 inches long; bill

to rictus 2·625, to base of culmen 1·75; tail 4·25, containing two middle rectrices and five lateral on each side; wing 11; tarsus 2·25. Bill black; legs and feet lilac-grey on the inner parts, black on the outer.

117. *ÆCHMOPHORUS MAJOR* (Bodd.).

Æcmophorus major, *Scl. et Huds. Arg. Orn. ii. p. 202.*

These large Grebes were abundant in the Laguna Llanquihui, but very difficult to shoot. I noticed that they were usually to be seen in pairs, when I was there about December. They constantly uttered a plaintive whistling noise, which appeared to be their call-note. At Puerto Octay I found them very abundant, and shot five or six. Unfortunately I had not had the skins sufficiently prepared before I fell ill at Osorno, and they did not keep well. I heard that the bird was to be found at Rio Bueno, but did not meet with any while there, and subsequently did not find an opportunity of obtaining fresh specimens.

118. *PODICIPES CALIPAREUS*, LESSON.

Podiceps caliparæus, *Scl. P. Z. S. 1891, p. 137.*

(Lake Huasco.)

This species is, I believe, widely distributed, occurring throughout Central Chili and some way south, where it is known as the "Blanquillo." I got one on a pool at Huasco (10,000 feet, Tarapacá Andes), about the commencement of March 1890, and subsequently saw one dead at Sacaya, and was told by my Indian companion that he had never seen one in that valley, though it occurred annually at Huasco; he called it a "Chiullumpe." How such birds get to these localities is, indeed, extraordinary, as they appear almost incapable of flight. I cannot imagine that any bird of this species could fly 20 or 30 miles, which they must do at least to reach Huasco.

119. *PODICIPES ROLLANDI*, Q. et G.

Podiceps rollandi, *Scl. et Huds. Arg. Orn. ii. p. 204.*

(Llanquihui and Rio Bueno.)

I saw these Grebes in flocks of from three to twelve in the Laguna, and shot a good many at Frutillar. I also got

some on the Rio Conta. Most of the former appeared to be young birds, and were of a darker colouring and immature.

120. *PODILYMBUS ANTARCTICUS* (Less.).

(Llanquehui and Rio Bueno.)

I met with this species first at Frutillar by the Laguna Llanquehui, where I secured a couple. It was not so plentiful as the large and small species of true Grebe. I subsequently got one where the Rio Conta joins the Rio Bueno, but the bird did not appear to be plentiful in these rivers.

121. *SPHENISCUS MAGELLANICUS* (Forster).

(Corral.)

This Penguin is numerous all about the southern coasts of Chili and neighbouring archipelagoes. In the islands of some of the latter and in Tierra del Fuego I was told that it bred in large quantities. There were a good many about Corral in summer-time, and I believe the species becomes more numerous in winter.

It is called by the natives "el Pajaro niño," which in English is "little boy bird." Some of the more educated Chilians call it "la Penguina," from the Spanish word, which is the same as the English.

These birds are usually to be seen floating on the water, and occur for some distance out at sea. When in good condition they contain such a quantity of oil that it is almost useless to try to skin them.

I usually saw from two to five of these birds in company together.

[The specimen from Corral obtained by Mr. Lane, and now in the British Museum, belongs to *S. magellanicus*, and not to *S. humboldti*, which is, I suspect, a more northern species.—P. L. S.]

122. *NOTHOPROCTA PERDICARIA* (Kittl.).

Nothoprocta perdicaria, Salvad. B. M. C. xxvii. p. 553.

(Maquegua.)

The Tinamous are generally spoken of as "Partridges" in South America, and are so called by British residents. The

universal local name is the Spanish term "Perdiz," and by this name the present species is well known throughout Central and Southern Chili. In the former it is undoubtedly aboriginal, and is more or less preserved by the land-owners; but in Arauco it is not so plentiful, as there is less cultivation, and where there is more the local gunners keep it down, and little protection is afforded it. I did not hear of it on Chiloe, but on going to Puerto Varas on the Laguna Llanquihui I found that a few resorted to the corn-fields of the German colonists. The latter told me that it was quite new to the neighbourhood, and said they wished to protect them; thus it may subsequently extend much further south. I found it extremely numerous about Rio Bueno and Osorno, which is a great wheat district; but, so far as I could learn, it had come there subsequently to the cultivation of the land, and is still spreading very rapidly. About Valdivia the "Perdiz" has scarcely appeared, but I believe there are few in that district.

The call-note of this bird is a loud whistle, or rather two whistling notes on an ascending scale uttered rapidly in succession, and is heard frequently throughout the breeding-season. When flushed it utters the most piercing cries, and flies steadily with rapid beat of the wings, alighting from 200 to 10,000 yards distant. It runs considerably before a dog, and if coppice be near is apt to get into it and skulk away, but in long wheat-stubble it lies fairly well. The nest is placed in wheat or coppice, and usually contains upwards of a dozen eggs. I did not observe more, but an old peasant at Rio Bueno assured me he had seen twenty eggs in one nest. I had various young ones (half-grown) in an outhouse at Rio Bueno which thrived fairly well on wheat, &c., with a few worms; but the rats generally killed them within a few days, and I had not time to devote to their efficient management, else I could have brought several home alive.

It nested near Llanquihui about Dec. 1st, and subsequently at Rio Bueno I got eggs up to the end of February; I fancy two clutches are produced.

123. TINAMOTIS PENTLANDI (Vig.).

Tinamotis pentlandi, Sci. P. Z. S. 1891, p. 137 ; Salvad. B. M. C. xxvii. p. 568.

(Sacaya and Cancosa.)

These birds are not uncommon in the Andes of Tarapacá, in the smaller valleys up to 14,000 feet, where they live principally on certain herbs or grasses, and probably on insect food as well. They are also called "Perdiz" or "Perdiz de la Cordillera."

I was told they nest at Sacaya from December to January, but I had some eggs and a female brought me on 5th April, 1890 ; the latter had been pounced on by an Indian's dog and was considerably mauled. They are said to lay up to a dozen eggs.

The flesh of both species of Tinamou is white and delicate, especially that of the present. These are difficult to shoot, as they resemble the sand in colour, and the want of cover makes it still harder to approach them.

The nest is merely a hollow scratched in the sand and lined with a few feathers.

124. RHEA DARWINI, Gould.

Rhea darwini, Sci. P. Z. S. 1891, p. 137 ; Salvad. B. M. C. xxvii. p. 582.

(Cancosa.)

In the Andes of Northern Chili this Rhea is not uncommon, but is difficult to procure. When its haunts are discovered it may be stalked and brought down with a rifle.

Its Spanish name is "Avestruz," but the Bolivian name is "Sūri." I usually saw from two to six together. I was told that they nest at the beginning of December, and lay two clutches of eggs, sometimes several miles apart. One lot, probably the first, are not hatched, and, by the time the others are, have become full of maggots, on which the young are fed during their first stage of existence. I could not find out whether the female broods, as, though the heat of the sun is sufficient by day to hatch eggs, the frost at night is severe. The two young birds sent home I bought from an Indian, and

kept alive some days while encamped. They made a plaintive whistling noise, and when turned out fed all round the hut, and returned towards dusk, when we whistled for them; they became quite tame.

XXV—*Field-Notes on the Birds of the Island of San Domingo.* By Dr. CUTHBERT CHRISTY.

At the beginning of January, 1895, I landed at the famous old city of Santo Domingo, the capital of San Domingo, and, after spending a day and a half among the picturesque ruins of old houses and fortifications and other places of interest, steamed away for Sanchez, where we arrived a day and a half later. This little town of ten years' growth (Las Cañitas of the old maps) is situated at the east end of San Domingo, at the head of Samaná Bay. It is the port and the headquarters of the Samaná and Santiago Railway Company, which runs west as far as La Vega, a distance of about 70 miles. From these two points, Sanchez and La Vega, all my collections were made. I left the island again in July, 1895, returning home *viâ* New York.

The port of Sanchez stands in a very healthy situation at the foot of a densely-wooded range of hills which bounds Samaná Bay on the north, and continues along the north of the island. The south shore of the bay is a mass of honeycombed white coral rocks, forming picturesque inlets and islands densely covered with trees and matted vegetation, but singularly devoid of bird-life, except Pelicans and some of the Ardeidæ, which resort to the islands to breed.

At the head of the bay, commencing a mile or so to the west of Sanchez, is a vast morass, some 20 square miles in extent, really the delta of the river Yuna, which drains the great "Vega Real" of Columbus. In this morass the ornithologist finds a rich avifauna, and I look back with feelings of pleasure to the several excursions I made into it. It can,

I believe, he entered only in a boat by one very narrow creek, about three miles up the Yuna, on the north bank.

At La Vega, where I spent the greater part of April and May, the country is very different. There it is flat and more thickly populated, while there are many large plantations of cacao as well as of some coffee. The forest is not so dense, and is intersected by open patches of coarse grass, called "savanas."

Three miles to the south of the town are the slopes of the Cibao mountains, which run the whole length of the island and contain some peaks which are said to be of an altitude of over 10,000 feet. Except for the exertions of Baron Eggers, and later on of Mr. C. B. Cory, the higher parts of this range are as yet almost virgin ground to the naturalist.

During my stay in the island I was engaged almost continually in medical work, and therefore had very little time for collecting and skinning. But I managed to make many fruitful excursions, and I had often to ride long journeys to see patients, on which occasions I always carried some skinning-tools and my walking-stick gun, as well as a net and collecting-bottles. The walking-stick gun was invaluable, and I obtained most of my specimens with it; but it was a source of trouble on several occasions, owing to covetousness on the part of divisional commissaries of police. Once it was taken away from me by a commissary and six soldiers, but the governor, to whom I sent, returned it to me with the request that I would not use it near the town, for if the merchants took it into their heads to import such a weapon, the next revolution might be a dangerous affair. After that my house was broken into by a commissary in broad daylight, but the gun was carefully hidden. An apology was made to me, and the man was locked up.

I succeeded in making in all about 70 skins, and after carefully identifying the species, with the kind assistance of Mr. Salvin and Dr. Bowdler Sharpe, I find that there are none which have not been more or less fully described by Mr. Cory and others, although there are representatives of a few rare species and some interesting plumages among

them. I have therefore avoided needless description and the subject of nomenclature, confining myself almost entirely to recounting my observations of the habits and mode of life of the different species, a subject upon which practically nothing seems to have been written. I have added occasional notes upon nidification, measurement, contents of stomach, and the state of testes or ovaries.

I had previously studied to some extent the birds of South America, having spent some time in the Argentine; but I knew nothing of North-American birds, and I had only Mr. Cory's book on the birds of Hayti and San Domingo to help me in identification.

+1. *MIMOCICHLA ARDESIACA*. Locally "Flautero."

(Cory, op. cit. p. 18.)

This species has a loud flute-like song, hence its local name. I found it pretty common at La Vega, but it was shy, and usually met with in the thicker parts of the forest. In an adult male, shot at Sanchez on Feb. 25, I found the testes were the size of peas. The stomach was full of black pimento-seeds and their pulp. In another specimen, an adult female, shot April 14, I found the stomach contained a lizard and several lizard's eggs. On May 17 I shot a male nestling.

There was no proper gizzard in these birds. The mucous membrane of the stomach was very thick, but soft and unusually separable from the thin muscular wall of the organ—an arrangement which suggested that in order to digest its food the bird required a more liberal supply of blood to the stomach than most other birds of its class: in fact, it was a stomach not unlike that of the carnivorous birds.

+2. *MIMUS DOMINICUS*. Locally "Ruisseñor."

(Cory, op. cit. p. 21.)

This is the Mocking-bird of San Domingo, and a really magnificent songster. It is a species peculiar to the island, and I found it common both at Sanchez and La Vega. Seated on the top spike of a royal palm, it pours out its glorious song for twenty minutes or half an hour at a time

throughout the greater part of the day. Compared with that of our English birds, the song is distinctly Thrush-like, but far more continuous, varied, and beautiful.

There is little or nothing of the bird's mocking-habits to be detected in its song in the wild state, but when caged there seems to be no limit to its powers of mimicry. It copies the whistles, the songs, and the various noises to be heard in the streets, the barking of a dog, the neighing of a horse, and the songs of other birds, all the while sitting still on its perch till it catches one's eye; then, as it hops about its cage in a restless sort of manner, it suddenly comes out with one of its best imitations, and when one turns away will probably begin to pour out its own well-known song, as if in hopes of detaining one a little longer. The natives are very fond of rearing this bird from the nest, and when so reared I think the Ruiseñor must truly be one of the most interesting and companionable of all cage-birds.

A nestling was brought to me as early as March 7, and I saw young in the nest in April. On May 16, at La Vega, I shot an adult male, one of a pair whose nest with three eggs I found close by. It was built about two feet from the ground, concealed among the young shoots growing from the stump of a felled tree in a clearing. The nest and eggs that I saw were not unlike those of our Missel-Thrush, but the nest is very variable. When placed, as it often is, at the end of a branch of an orange- or other tree, 10 or 15 feet from the ground, and frequently quite close to a house, it is small, flat, and with untidy twigs sticking out in all directions.

3. *DENDRÆCA CORONATA*.

(Cory, op. cit. p. 30.)

Common among the scrub-willow and undergrowth on the banks of the river Yuna and in the Sanchez district, but I rarely observed it in the interior. Of two specimens obtained, an adult male was shot on Feb. 19 and another Feb. 27.

4. *DENDRÆCA PALMARUM*.

(Cory, op. cit. p. 32.)

An adult male collected on Jan. 28 near Sanchez. This species may have been as common as the previous one, but I was unable to distinguish them on the wing.

5. *SEIURUS AURICAPILLUS*.

(Cory, op. cit. p. 34.)

An adult female (length $5\frac{1}{2}$ inches) which I shot near to La Vega on April 19 was so extraordinarily fat that I had the utmost difficulty in preparing it and in separating the masses of oily fat from the tissue-paper-like skin.

6. *GEOTHELYPIS TRICHAS*.

(Cory, op. cit. p. 36.)

This graceful little bird, with its characteristic yellow-tinted throat, I only observed once or twice. On April 19 I shot a female (length 5 inches, stretch $6\frac{1}{2}$) at La Vega.

7. *SETOPHAGA RUTICILLA*.

(Cory, op. cit. p. 40.)

The only specimen I obtained of this species was a male from near Sanchez.

8. *CERTHIOLA BANANIVORA*. Locally "Seguitta de Savana," or, by the St. Thomas negroes, the "Beanflower-picker."

(Cory, op. cit. p. 41.)

This little bird, peculiar to the island, I saw several times at Sanchez. A male was brought to me there on Feb. 29, and I shot another male (length 4 inches, stretch $6\frac{3}{4}$) at La Vega on May 2. The tongue of this species is interesting. It is similar to the tongue of the Humming-birds, but far more specialized, being like a long, thin, fine, camel's-hair brush. One would think that a tongue like this could do nothing more than pick up from the interior of flowers the little drops of thin syrup by capillary attraction. I unfortunately omitted to examine the contents of the stomachs of those I skinned, but I have no doubt that the bird does feed on insects as well as syrup, for Mr. Cory remarks:—"At Le Coup (San Domingo) we observed it daily running about

the trunks of the banana-trees.” The few times I observed the bird it was peeping into flowers; but this, of course, would not prove that the bird was feeding on syrup only, for we know that the Humming-birds feed mainly on insects, although they seem to be sucking honey from the flowers all the time.

This species certainly has the head and beak and actions of a Creeper, but it should be noted that it has neither the stiff tail nor the feet of that genus.

+9. *HIRUNDO SCLATERI*.

(Cory, op. cit. p. 45.)

Swallows were common at La Vega, and I believe they all belonged to this species, but I failed to preserve a specimen. I observed none elsewhere than at La Vega.

+10. *DULUS DOMINICUS*. Locally “Palm-Sparrow.”

(Cory, op. cit. p. 51.)

A very common bird, peculiar to the island, breeding in colonies in nearly every grove of royal palms.

The nests are sometimes very large, quite an armful of twigs, interwoven into a compact mass in the head of the palm or on the cluster of berries just below the head. In this ball of sticks there are generally three or four nests, merely burrows into the side of the mass, the end lined with finer twigs; but what the eggs were like I did not discover. This bird is peculiar in its habits in many ways. It possesses most powerful legs, feet, and bill, and the size of the sticks which I have seen it break off and carry up to the palm-trees has often astonished me. One soon knows when one is in the vicinity of a colony, for the birds are noisy, with a very aggressive way about them, and at intervals they set up a most tremendous racket, every bird in the colony suddenly, as if at a given signal, making as much noise as possible. This lasts for about ten seconds or so, and then stops as suddenly as it began. I rather think that this may go on all day, whether anyone is in their neighbourhood or not, but I never could make sure. A female shot May 2 at La Vega measured—length $7\frac{1}{2}$ inches, stretch $10\frac{1}{4}$.

11. SPINDALIS MULTICOLOR.

(Cory, op. cit. p. 54.)

Another bird peculiar to the island, although, like certain other species, it somewhat resembles its Jamaican and Cuban relatives. The only one I observed was a female (length $6\frac{1}{2}$ inches), which I shot on Feb. 25 in the forest to the north of Sanchez.

Its stomach was full of soft dark purple seeds. The juice of these seeds stained the mucous membrane of the stomach and intestines almost black, and oozed from the vent and mouth. The food of these rare birds is evidently very soft, as there was no proper gizzard, only the soft thin stomach-wall.

12. PHENICOPHILUS PALMARUM.

(Cory, op. cit. p. 56.)

Peculiar to the island. I found this bird common both at Sanchez and La Vega. They are rather skulking in their habits. Sometimes the woods resound with their squeakings, and yet not one can be seen. In July a boy at Sanchez brought me five specimens, which unfortunately I had no time then to skin. One of these had the streak over the eye bright yellow instead of white, but otherwise the markings were normal. This I think now must have been a young bird, for on looking over those in the British Museum collection I find that one of them, an immature specimen, has the two spots on the forehead tinged with yellow and some yellow feathers on the throat.

Of other specimens obtained, a male shot on Feb. 19 at Sanchez had testes the size of peas, and a female shot on Feb. 10 measured $7\frac{1}{4}$ inches.

+13. CALYPTOPHILUS FRUGIVORUS.

(Cory, op. cit. p. 59.)

Peculiar to the island and rare, according to Cory. I met with it only once, on April 19, when I shot a male (length 8 inches, stretch $10\frac{1}{2}$) while pushing my way through some thick undergrowth in the forest near La Vega.

14. EUPHONIA MUSICA.

(Cory, op. cit. p. 61.)

Another species peculiar to the island.

The only time I met with it was very early one morning at La Vega on May 2, when I discovered a pair sitting on a dead branch at the top of an alligator-pear-tree. I brought both of them to the ground with a shot from my walking-stick gun, but unfortunately only recovered the male (length $4\frac{1}{2}$ inches, stretch $7\frac{3}{8}$). The testes were very small. My specimen differs from the plate in Cory's book chiefly in having the slate-blue colour on the back of the head and neck much less perceptible.

15. PHONIPARA ZENA.

(Cory, op. cit. p. 63.)

This common and cheery little bird is to be found everywhere along the roadsides and in the clearings, flying up onto the wire fence or a branch as you draw near and uttering its peculiar little long drawn-out twitter or trill, beginning on a high note and ending on a lower, reminding one of the note of our Wood-Warbler (*Phylloscopus sibilatrix*), but uttered much quicker.

I saw several nests of this species towards the end of June, built like our Willow-Warbler's (*P. trochilus*), but *minus* the lining of feathers (another point of similarity between it and *P. sibilatrix*), and placed conspicuously in the tufted head of spines on the top of a pineapple. The eggs resemble those of *P. sibilatrix* in size, but are marked with pale rust-coloured spots and blotches at the large end.

16. LOXIMITRIS DOMINICENSIS.

(Cory, op. cit. p. 67.)

This species locally, by a few of the natives, is called "Canario," the "Canary"; it is a magnificent bird, peculiar to San Domingo. I several times heard it in the dense forest near La Vega, but, owing to its shyness, it was some time before I could identify it.

It has a beautiful flute-like song, but slower and not to be compared with the Canary for variation. On June 3, after a

very stealthy stalk, I had the pleasure of watching one singing for several minutes before I shot at and missed or lost it. In the densest parts of the forest the odds are very heavy against finding a small bird when shot, even those with gaudy plumages.

A week afterwards I saw another not quite so brightly marked, which I believe to have been the female, near the same spot.

17. *LOXIGILLA VIOLACEA*.

(Cory, op. cit. p. 69.)

On Feb. 25 I shot, high up on the hills at the back of Sanchez, among dense large growth, the only specimen I saw of this species, a male, in which the testes were the size of peas. The gizzard, which was a very muscular one, contained stones and broken, black, hard seeds with yellow pulp.

18. *ICTERUS DOMINICENSIS*. Locally "Segua calandra."

(Cory, op. cit. p. 71.)

An Icterine peculiar to the island and interesting in many ways. It was very common, and sometimes to be seen in flocks of 20 or 30. At La Vega all through the day I could hear the loud monotonous chirp of these birds while feeding in the pitch-tree close to the house. This tree has large leaves, like a *Euphorbia*, and a dozen birds might be feeding in it, but not one be visible, so fond are they, I suppose, of the shade of the leaves. Sometimes they would sing very prettily—a quick, high-pitched, musical little warble.

But occasionally I would hear from this tree quite a different song, composed of several loud notes, and on going out all I could find would be a "Segua" in the uniform yellowish-brown plumage of the young bird (according to Cory). This puzzled me a good deal, and I came to the conclusion that there must be two different species. At last, however, on May 24, I shot one of these brownish birds, evidently in a transitional state between that and the black-and-yellow plumage, in the act of singing this loud song, and on dissection it proved to be a young female. This rather added to the mystery at the time, for I was

forced to the conclusion that the young females were able to sing as well as the old males, and, what is more, quite a different song. I think now that there can be little doubt of this rather extraordinary peculiarity, for upon looking up the subject I find that Maynard, in his 'Birds of Eastern North America,' mentions the same thing in connection with the Baltimore Oriole, with some still more extraordinary additions; and in a paper in the 'Field Columbian Museum, Chicago,' vol. i. no. 1, on the "Ornithology of San Domingo," by Mr. George K. Cherrie, he says:—"Males and females are alike in plumage, and both sing;" and he goes on to say, "One individual that I secured, while but slightly wounded, gave a splendid exhibition of its powers of song, as a result of, or under the influence of, excitement and pain. A native boy I had with me begged to have the bird, and for several hours, while he was carrying it in his hand, the little creature sang almost continuously." As Cassin, Cory, and others seem to have studied the Icteridæ pretty closely, it is hardly probable that there can still be two species in San Domingo, although several varieties have been described.

The following specimens were obtained:—Sanchez, Feb. 12, an adult (length $7\frac{1}{4}$ inches); Feb. 29, an adult male (length $8\frac{1}{4}$ inches), in which the testes were small. La Vega, April 17, an immature male in which the beak and feathers on the forehead were caked with some brown stuff, which I took to be the pulp of the cacao-seeds; May 9, an adult male (length $8\frac{3}{4}$ inches, stretch $11\frac{1}{4}$); May 24, an immature female (length 8 inches, stretch 10), the one mentioned above; and on June 4 a young male nestling (length $6\frac{1}{4}$ inches, stretch $10\frac{1}{4}$).

The stomachs in all the specimens I examined were practically empty, which rather surprised me, as I shot them in the act, as I thought, of feeding.

19. QUISCALUS NIGER.

(Cory, op. cit. p. 73.)

This species, locally "Chinchilling," a name which well describes the note of the bird, which is musical and bell-like. It is peculiar to the island, and, like the American Grackles, is interesting on account of its ability to ap-

proximate the feathers in the two lateral halves of the tail, the outer ones moving upward, and the inner ones, which are longer than the outer, coming together and forming a vertical rudder, like that of a boat, by which the bird steers to a nicety.

This species puzzled me a good deal as regards its connection with the nests of the *Dulus*. Just by the house in which I lived at Sanchez was a cluster of palms which contained a colony of Palm-Sparrows, and at intervals during the day, the whole time I was there, from January to April, the fierce cries of the Sparrows were mingled with those of the tinkling Chinchilling, sometimes apparently in mortal combat. For some time I fancied they must be breeding in the nests of the Sparrows, but the natives informed me that they built nests of their own quite different from the Sparrows' later in the year.

When I had watched them many times and had become more acquainted with them, I found that they visited the Sparrows' nests almost every morning and robbed them of any eggs they could find.

The stomach of a female (length $10\frac{3}{4}$ inches, stretch $14\frac{1}{2}$) which I shot at Sanchez on March 14 contained the remains of large spiders.

+ 20. *CORVUS LEUCOGNAPHALUS*.

(Cory, op. cit. p. 74.)

Common in the morass on the Yuna river where there are large trees. Their noise can be heard a long way off when a number are collected together. The note in itself is very peculiar, and appears to be compounded of a half musical cackle and a whistling kind of laugh, but sometimes it is harsh and discordant. It is one of the most strange noises I have ever heard from any bird. I shot several, but was unable to procure a specimen for skinning, for, like the Parrots, they invariably settled on the top spike of the palms, and when shot fell into the spreading leaves beneath.

+ 21. *TYRANNUS DOMINICENSIS*. Locally "Petigary."

(Cory, op. cit. p. 77.)

The memory of these birds is not pleasant. Their shrill

ceaseless notes are very irritating and prevent all sleep after daybreak, and often earlier, if they happen to be in the vicinity of the house. I saw several nests, each with young, in June. They were astonishingly small flat structures of just a few twigs placed crossways on each other, and all situated at the extremity of a horizontal branch some 6 or 10 feet from the ground. These birds are very pugnacious. At La Vega I saw a boy fairly defeated in an attempt to rob a nest, although six or seven other boys were throwing sticks and stones from below to keep the birds off him. The Petigaries flew at his head and hit him with their wings, and rustled up and down a branch within a few inches of his face, with crest and feathers ruffled, shrieking all the while in a most ferocious manner, until the boy got frightened and retreated.

+ 22. *MYIARCHUS DOMINICENSIS*. Locally "Maroa."
(Cory, op. cit. p. 79.)

Another species peculiar to the island. The only specimen I procured of this Flycatcher, although I observed it several times, was a female (length $6\frac{7}{8}$ inches, stretch $10\frac{1}{2}$) on March 26 at Sanchez. Its stomach was full of small black and green beetles only.

+ 23. *CHORDEILES MINOR*.
(Cory, op. cit. p. 85.)

In July, at La Vega, about an hour or more before sunset, these birds sometimes appeared in considerable numbers, generally when it was or had been pouring with rain. At one time I counted as many as nine, hawking together in the pouring rain round a large tree in the open until it was too dark to follow their movements. Their peculiar note is very distinctive, and generally uttered when they first appear and are flying high. When it is very dull and wet they fly low, backward and forward between the houses, with their characteristic butterfly-like flight, and the big white spot on the primaries showing like a hole in each wing. I was never able to see what they were catching, but the natives say they feed on mosquitoes. One was brought to me in a

decomposed condition from near the railway-station, where it was said to have flown against the telegraph-wires.

+ 24. *CYPSELUS PHENICOBIVS*.

(Cory, op. cit. p. 87.)

+ 25. *NEPHÆCETES NIGER*.

(Cory, op. cit. p. 88.)

There were two species of Swifts common at La Vega, but the larger one was by far the commonest and gathered in vast flocks towards the evening in wet weather to feed over the waste ground just outside the town.

I did not collect any specimens.

26. *LAMPORNIS DOMINICUS*. Locally "Soombador."

(Cory, op. cit. p. 90.)

I observed this species only twice, although Cory says it is very abundant—once at Samaná, and again on the hills near La Vega. I failed to obtain a specimen.

+ 27. *SPORADINUS ELEGANS*. Locally "Soombador."

(Cory, op. cit. p. 93.)

This Humming-bird was fairly common both at Sanchez and La Vega. A pair frequented the garden almost every morning during March, sometimes probing the flowers of the magnificent scarlet hibiscus and sometimes hovering round the spikes of the large aloes in front of the veranda.

+ 28. *MELLISUGA MINIMA*. Locally "Soombador."

(Cory, op. cit. p. 92.)

This diminutive little Humming-bird, not much bigger than a bumble-bee, was common both at Sanchez and La Vega, and I found several of its nests. One, at the end of March, near Sanchez, containing two young ones, was a tiny cup-like structure placed between the fronds of a small fern on the bank of a stream, lined and chiefly made of wool and fine hair, and disguised outside with little pieces of green moss, lichens, and cobwebs. At the beginning of March I had a nest sent to me from La Vega containing two full-grown young ones.

The noise this little tiny creature can make is quite extra-

ordinary. Perched on a dead branch at the top of a big tree in the forest, turning his head from side to side, he sings, for 5 or 10 minutes at a stretch, a loud, high-pitched, discordant, disconnected little song, which can be heard a hundred yards or so away. This species was much more common among the larger forest growth, and I seldom observed it in the garden, like *Sporadinus elegans*. Although about the smallest of all the Humming-birds, it makes the most incredible humming noise with its wings when flying, or at least when hovering. Often one hears the humming overhead in the forest, much louder than any bee, but it is not so easy to catch a glimpse of the bird; in fact, its movements are often too quick for the eye to follow.

+ 29. TEMNOTROGON ROSEIGASTER.

(Cory, op. cit. p. 95.)

A bird peculiar to the island, and, although rare and local, well known to the natives at La Vega, not on account of its magnificently gaudy plumage, which they say has seven colours, but owing to some superstition connected with it. At the same timen one of them agreed as to the details of that superstition.

They say it is to be found only on the mountains above Harabajoa, some 20 miles or so south-west of La Vega. I was not fortunate enough to obtain a specimen. The Governor of La Vega kindly sent some men to shoot me one, but owing to a bad attack of fever I had to leave before they returned, and I heard afterwards that they came back empty-handed.

The natives round La Vega knew nothing specially of the note of this bird, nor did they seem to know anything of the "Musician" (*Myiadectes montanus*) mentioned by Mr. Cory as inhabiting the tops of the mountains, possessing a magnificent song, and as being looked upon by the natives with dread owing to the superstition that he who saw one would shortly die.

This was the only bird I heard of in San Domingo to which any superstition was attached.

+ 30. SAUROTHERA DOMINICENSIS.

(Cory, op. cit. p. 98.)

Locally "Pajaro bobo" or the "Silly bird," apparently because, when one stops to observe it, the bird, instead of flying away, remains in the bush or tree and can be easily killed.

It is another species peculiar to the island and common wherever I went. The natives say it feeds on lizards; but the stomachs of both specimens which I skinned (males, on April 4) were full of big green grasshoppers.

Its loud cry is easily confused at first with that of the "Boojaro" (*Ædicnemus dominicensis*); but sometimes in the mango-trees it makes a deep croaking noise.

-- 31. CROTOPHAGA ANI. Locally "Hoodëo," "Black Witch."
(Cory, op. cit. p. 100.)

Seen once or twice at Sanchez, but very common at La Vega, usually in flocks of 10 or 12 in the clearings where cattle were feeding. There were no cattle at Sanchez. The peculiar knife-blade shape of the upper mandible in this bird, I think, must be to enable it to separate the small blades of grass and so hunt more easily for beetles and insects. The stomach of a female (length 14 inches, stretch $16\frac{1}{2}$) which I shot at La Vega on May 6 was full of insects, beetles, and grasshoppers. All the specimens I handled had a most abominable smell, both in life and even after the skin was prepared.

In two large trees standing in a small savanna near a railway station on the line to La Vega, I was shown two large nests built of sticks, which were said to have belonged to this species. The native who pointed them out to me said they were years old and had been forsaken on account of the railway being so near. He also assured me that each nest belonged to quite a number of birds, which I find now may have been the case.

Some eggs, said to have been those of the Black Witch, were sent to me early in July at La Vega. They were large, I thought, for the size of the bird, nearly round, of a greenish-

blue colour, and had a thin, rough, chalky shell. The habits and manner of this bird are very peculiar, and its cry is most distinctive, reminding one of the mew of a cat or a Common Buzzard (*Buteo vulgaris*).

32. CERYLE ALCYON. Locally "Rejongo."

(Cory, op. cit. p. 103.)

This was a familiar bird during June along the Yuna and in the creeks amongst the mangroves at the head of Samana Bay. When out shooting Ibis or Duck I was often startled by its loud rattling scream. The stomach of one (length $12\frac{1}{2}$ inches, stretch $20\frac{3}{4}$) shot on March 7th was full of the remains of small crabs.

33. TODUS SUBULATUS.

(Cory, op. cit. p. 105.)

A common and most grotesque-looking little bird, peculiar to the island, and locally called by the natives "Barrancoli," but by the negroes "Robin Redbreast."

At first sight it resembles a small European Kingfisher, and, in fact, in structure and mode of life it is almost identical with the Kingfishers, except that it feeds on insects instead of fish. I have often noticed that it is invariably seen or heard in the immediate vicinity of water, and, like the Kingfisher also, it breeds in a hole dug by its own energies in some soft bank at the side of a stream or roadway.

In walking through the forest I often stopped to identify this little creature, and to listen to its most extraordinary noises.

When first approached it makes a noise easily mistaken for the grunting of some pigs, which are common in the forest, and at intervals snapping its enormous ungainly bill, loud enough to be heard some distance off. Its commonest note is a loud chirping, not unlike the early spring note of our Chaffinch, with one or two variations, getting louder and more excited as one remains, and yet all the time sitting stock-still on a branch with its feathers puffed out, its head sunk between its shoulders, its beak stuck up in front looking far too heavy for it, and its back so exactly the colour of the surrounding foliage that it is most difficult at first to see it.

I examined several breeding-holes of this little Tody, one of which contained young. These excavations were not bored straight into the bank, but turned off to the right or left for about a foot or eighteen inches. I could not judge by any impressions left in the earth whether they were excavated by the feet or the bill or both; but it will be noticed that the feet are exactly like those of a Kingfisher.

Of several specimens shot, one (Sanchez, Feb. 10) measured $4\frac{1}{2}$ inches, another (Feb. 29) $4\frac{5}{8}$ inches in length.

+34. CENTURUS STRIATUS.

(Cory, op. cit. p. 111.)

Locally "Carpentéro," or the "Carpenter Bird," a species peculiar to San Domingo, and quite one of the commonest birds in the island.

It is most destructive, for in some districts it is difficult to find a palm-tree which is not riddled with holes, and yet the wood of these trees is so hard that it is not easy to make an impression on it with a penknife. They not only bore into the palm-trees but into the houses, and make great havoc with the telegraph-poles, besides destroying great quantities of cacao (chocolate) by boring into the half-ripe fruit. I do not remember to have seen a boring in a cocoanut palm, but always in the royal palms.

Governor Anderson, of Sanchez, told me quite seriously that twice he had received orders from the President of the Republic to have all the Carpenteros shot (the dirty ragged soldiers are sure to get into mischief if they are not shooting somebody or something), which orders he had executed; but they were still to be seen in hundreds, and their noisy cries resounded on all sides. Some of their holes are within three feet of the ground.

At Sanchez, on Feb. 27, I took a clutch of four slightly-incubated eggs of this Woodpecker from a hole eighteen inches deep, about eight feet from the ground. The four eggs varied a good deal in size, measuring $24.5-26.5 \times 18.0-19.0$ mm.; their colour is porcelain-white, but they were plastered with dirt from the bottom of the wet hole.

An adult female (length $8\frac{1}{2}$ inches, stretch 14), shot at

La Vega on April 4, had a large quantity of long, stiff, thin, round worms in the peritoneal cavity, and also in the cellular tissue on each side of the neck, reaching with the backward prolongations of the hyoid right up as far as the forehead.

435. *CONURUS CHLOROPTERUS*.

(Cory, op. cit. p. 113.)

I saw several small parties of this Paroquet, making a great squeaking as they flew overhead as I returned from shooting up the river Yuna; but I was never able to obtain a specimen. It is, I believe, very local. This and the following species are both peculiar to the island.

436. *CHRYSOTIS SALLÆI*. Locally "Cotôro."

(Cory, op. cit. p. 115.)

This Parrot is common in San Domingo. Round Sanchez it was to be met with at every turn, flying out of its nesting-hole in some old palm-tree or in small parties overhead, waking the echoes with their screeches.

I can testify from personal experience that the flesh of this Parrot is very good eating, and it is much esteemed by the natives, whom I often met coming home with a string of half a dozen or more shot with their old muzzle-loaders.

At times at Sanchez these birds afforded first-rate sport, for they flew with the greatest regularity from their breeding-haunts among the palm-trees in the swamp to the rice-fields and other feeding-grounds eastward, and back again in the evening, making all the way more noise than a flock of geese. When in returning they found a strong wind against them they were obliged to fly directly over the town, and low down to get the shelter of the hills, so that one only had to take one's stand on the veranda, or behind a palm-tree, or, better still, between two houses, and shoot as they passed over. But shooting was extremely difficult, owing to the high wind, the speed at which the birds flew, and the suddenness with which they rose to a higher level the instant they caught sight of a man.

+37. *RUPORNIS RIDGWAYI*.

(Cory, op. cit. p. 121.)

Several times while shooting up the Yuna river I saw what I took to be this bird, but I was unable to procure a specimen.

+38. *FALCO COLUMBARIUS*.

(Cory, op. cit. p. 123.)

One afternoon while sitting in a mangrove-swamp at the head of Samaná Bay trying to endure the torture of the sandflies and mosquitoes, in the hope of getting a shot at some Ibises, I had the pleasure of watching for some time through my glasses one of these little Falcons, a male and the only one I met with, flying off and returning several times to the dead branch of a tree some 80 yards away.

+39. *CHAMÆPELIA PASSERINA*. Locally "Rollita."

(Cory, op. cit. p. 127.)

This little Ground-Dove was very common at La Vega. I found several nests with eggs or young towards the end of June, beneath tufts of grass in the clearings. When feeding on the ground they are very tame and it is easy to approach within a few feet of them. They get very fat and are good eating. I found it most difficult to make a good specimen owing to the thinness of the skin and the loose attachment of the feathers.

The crop of a male (length 6 inches and stretch $9\frac{1}{2}$) which I shot at La Vega on April 9 was full of dry, round, flattish, brown seeds. Two ova in a female (length $6\frac{3}{4}$ inches and stretch $9\frac{1}{2}$), shot on May 7 at La Vega, were larger than peas.

+40. *ZENAIDURA CAROLINENSIS*.

(Cory, op. cit. p. 129.)

I met with this bird at only one place, where the railway crosses the Camoo river, about 3 miles east of La Vega. There, on May 10, I saw a dozen or more feeding about the line, and I shot two specimens, a male and a female, both immature.

41. GEOTRYGON, sp. inc.

Abundant in the forest on the hills at Sanchez. Generally to be met with by twos or threes feeding on the ground; but difficult to shoot, as one catches only a momentary glimpse of the birds as they fly silently and quickly through the undergrowth. I never saw them fly up into trees. I was shown several old nests placed on stumps of trees or matted creepers near the ground.

Although I shot several of these Pigeons, I omitted to preserve a specimen, owing to want of time; hence I am uncertain whether they were *Geotrygon montana* or *G. martinica*.

+42. COLUMBA INORNATA. Locally "Palōma."

(Cory, op. cit. p. 136.)

At the head of Samaná Bay there are well-recognized Pigeon months, June, July, and August, and during these months the natives make almost daily excursions from Sanchez to the mangrove-swamps, where the Pigeons are in tens of thousands. They load and fire as fast as their antiquated muzzle-loading appliances will permit, and come home sometimes with their boat literally laden with Pigeons, which they sell for 10 cents per couple. These are delicious eating at this season if properly cooked.

I made several excursions into the swamp after Pigeons, and one day, June 25, I shot as many as 120, mostly on the wing, in about three hours. It is only necessary to put on a pair of waders or top-boots and take one's stand in the best open space one can find among the tallest mangrove-trees. After a dozen or so have fallen, some shot as they fly over and others as they settle for a moment on the tops of the trees, the most difficult work of the day begins, that of wading round to look for them. Unless a native is employed to retrieve them, one has to climb through the network of wet and slippery aerial mangrove-roots, sometimes sinking into the black mud and water up to one's middle, while legions of small crabs, and some big ones with legs a foot long, recede and disappear behind each root or up each stem

as one approaches, to say nothing of the clouds of sandflies and mosquitoes.

When all that can be found are picked up one returns to one's post, and the shooting goes on once more, till sufficient are shot again to make it worth while to collect them.

—43. *ÆDICNEMUS DOMINICENSIS*. Locally "Boojaro."

(Cory, op. cit. p. 140.)

This bird I only saw once in the wild state as I was riding across the Savana Grande near Almaen; but I believe it is pretty common. Many natives and others keep them in their houses or enclosures to feed upon the cockroaches &c. They much resemble at first sight the Stone Curlew (*Ædicnemus crepitans*). Their cry is very loud and often uttered at night; it is a series of quickly repeated notes, running down the scale, the last notes lower and slower than the first.

44. *TRINGOIDES MACULARIUS*. Locally "Fleidicito."

(Cory, op. cit. p. 148.)

Very common; I observed it many times round Sanchez, on the beach, in the mangrove-swamps, and up the river Yuna.

A male I skinned Feb. 28 measured $7\frac{1}{2}$ inches in length.

+45. *ÆGIALITIS VOCIFERA*.

(Cory, op. cit. p. 141.)

Three times at La Vega, and once at Puerto Plata in July, while riding across small savannas, I met with a pair of beautiful Plovers which I took to be *Æ. vocifera*; but, as I obtained no specimens, I never was quite sure of their identity.

In two instances they evidently had eggs or young. They acted much like a pair of noisy Golden Plovers (*Charadrius pluvialis*), calling from hummocks, or running along the ground, or getting up and flying round excitedly, making a deal of noise.

+46. *EUDOCIMUS ALBUS*.

(Cory, op. cit. p. 150.)

This bird, locally named "Koko," on account of its arti-

culating these syllables in a sepulchral voice when surprised while feeding in the dark and silent mangrove-swamps, was very common up the rivers Yuna and Baracota, at the head of Samaná Bay. The natives shoot them to eat, but the flesh to my mind has a disagreeable flavour.

Of all flight-shooting that I have experienced I think the White Ibis affords the best. Several times while at Sanchez I rowed over with two companions, and a native boy to act as retriever, to one of the mouths of the Yuna, reaching there just before dusk. As soon as we had chosen a partly-concealed place for the boat, where we could command a view of open water on both sides of us, so as not to lose any birds in the mangrove-bushes, the Kokos and Ducks began to come over in small parties to feed on the mud, affording us some splendid shooting, the Kokos flying slowly and silently, the Ducks swiftly and whistling. In the half-hour before darkness set in we often had secured 10 or 15 Ducks and perhaps 30 or 40 Ibises, besides other birds.

A young male I skinned on Jan. 28th measured—length $25\frac{1}{2}$ inches, stretch $30\frac{1}{2}$.

⌞ 47. TANTALUS LOCULATOR.

This species was not common; but I gathered from the natives and others that there were always a few to be seen in the morass at the mouth of the Yuna.

At the end of June, while on a shooting expedition in this morass, I saw five of these birds about half a mile off perched on a tree covered with matted creepers. They very soon rose, and rather to my surprise circled high up into the air. We several times during that day saw single birds, and once I obtained a long shot at one flying over, but without result. The boatmen called them the "Faisan." What the word meant they could not tell me; but it seemed to have some connection with the bare vulture-like head and neck of the bird.

⌞ 48. ARDEA CÆRULEA.

(Cory, op. cit. p. 154.)

This is by far the commonest of all the *Ardeæ* that I met

with. In the swamp at Sanchez it was to be found in hundreds. On my shooting-trips up the river it was a constant companion, flying up within shot at every few yards. Tame and confiding, it often let the boat pass within 20 feet of it. It gave sometimes a feeble heron-like squeal. When I first saw this bird I could hardly believe that the slaty-blue ones belonged to the same species as the white; but they were always together, sometimes in flocks of 15 or 20 feeding in the swamp, and their habits seemed similar, except that the white ones were certainly more confiding than the blue; but if the white ones are the young of the blue, this might be expected. It seemed easier to believe that they were male and female and not old and young, for I never once, out of many hundred birds, saw one with a distinctly intermediate plumage. It was far more common to see a pair of white and blue ones fly up together than it was to see two blue ones, and I counted to see whether the white or the blue were the commonest, and found them about equal. I was sorry not to have had more time in which to have studied them.

+ 49. *ARDEA VIRESCENS.*

(Cory, op. cit. p. 155.)

This species, though common, was far less so than the preceding. I seldom saw more than one at a time, and this one was generally sitting stock-still on a branch or a stump, near the water-level, with its head sunk deep between its shoulders, showing no signs of its long neck.

Suddenly, as the boat drew near, the bird's head appeared to be flying off without the body; but the wings opened and the bird followed, seemingly twice as long as it was before, and, waking the echoes with a loud, harsh, angry screech, would settle behind some bushes and peer over the top with its outstretched neck until the boat had passed.

A gentleman on the staff of the railway at Sanchez on the 18th June gave me a graphic description of a heronry belonging to this species which he had seen the day before, on a little island not 30 feet in diameter which I had visited more than once early in the year at the mouth of the Baracota

river. There were about 16 nests in the trees and on the mangrove-bushes, many of them with eggs, which he described as blue. Those which were destined for me got broken in transit.

+50. ARDEA EGRETTE. Locally "Galca-real" or "Royal Heron."

A common bird in the Yuna swamp, but observed nowhere else. It was not very easy to approach, but I shot several specimens with No. 4 shot at long distances. It is really easier to bring down than almost any other large bird, for if one single shot so much as touches the wing-bones they splinter at once, being large thin tubes of compact bone filled with air. Hence the graceful flight of the bird, its buoyancy enabling it to settle slowly and easily, and when rising one beat of its wings makes it bounce into the air like a toy-balloon.

The usual attitude of this bird is markedly rectangular, and has none of the beautiful curves of neck and body invariably shown in plates and stuffed specimens. It stands with its body almost upright, its long thin neck rising as straight as a stick perpendicularly from the shoulders, and its head and long beak exactly at right angles to its neck. It is impossible for it to bend its neck in graceful curves, for each individual cervical vertebra is 2 inches or more long. The pectoral skeleton is surprisingly small and fragile for the size of the bird. The anterior border of the sternum is very deeply notched to receive a coil of the trachea, and the furcula is jointed closely to the sternum, evidently so that it should not press upon the coil of trachea above. I do not remember to have heard this species make any noise.

It seemed always to feed alone, and not in company like *A. cærulea*.

The Galca breeds early, for on Feb. 18 I made a trip to the Baracota, another river which falls into the head of Samaná Bay, on board the steam-tug belonging to the Railway Company. On coming out of the mouth of the river we had to hug the south shore of the bay, and passed

a picturesque, high, rocky coral island, covered with large trees thickly hung with luxuriant creepers. These trees were occupied by a heronry of some hundred or more birds of this species. Through my glasses I could make out many nests, some with the birds sitting upon them, while other birds were grouped about the trees, making altogether a picture not to be forgotten. I could not land, and did not get a chance of visiting the spot again. The long plumes of this Egret are occasionally sent by the merchants of Sanchez to New York for sale, and are said to realize a high price.

+ 51. NYCTIARDEA NÆVIA.

I met with this species many times in the Yuna morass. The only specimen I preserved was an immature bird, which I shot one evening as it flew over in the twilight while I was flight-shooting in the Yuna delta.

+ 52. NUMIDA MELEAGRIS. Locally "Guinëa."

The Guinea-hen is a common bird in San Domingo, both in the domesticated and wild state. Occasionally in the drier parts of the Yuna swamp a covey of these birds, very wild when on the wing, afforded me good sport. The wild birds seemed smaller and much blacker than the tame ones.

53. ERISMATURA, sp. inc. (?). Locally "Pato."

The chief aim of several of my never-to-be-forgotten excursions into the morass at the mouth of the Yuna was ducks, and ducks we found in hundreds.

It was easy to discover them, often long before we first sighted them on some open patch of water perhaps a quarter of a mile away, by the whistling that they kept up; and by all of us kneeling down in the boat, except the man whose duty it was to scull her along, we soon managed to get within shot. After packing together and swimming away for a while, the Ducks would begin to rise, those nearest first. Then was the orthodox moment, and we emptied our barrels into them. Well do I remember my astonishment, on the first of these trips, to see the greater part of the Ducks remaining on the water after we had fired, instead of rising in a body. They seemed to be dazed and demoralized,

swimming about for some minutes, and then getting up and flying in all directions, affording us, after partially sheltering the boat amongst the rushes, half an hour's excellent sport. They were, however, difficult to recover, and we lost a great number, for, if only a spark of life was left in them, they dived and we saw them no more. Our bag that first day was 74. They are very good eating. On these excursions I found a pair of long fishing-waders invaluable.

I did not meet with more than this species of Duck and the Garganey (*Querquedula discors*), although the natives told us there were several other sorts in this morass. Nearly all those I shot of the present sort were immature, and I was never quite satisfied as to the species. Owing to the loss of the only two skins which I made, from the ravages of white ants, in San Domingo, I am unable to establish its identity.

†54. *QUERQUEDULA DISCORS*.

(Cory, op. cit. p. 168.)

Seen and shot several times in the Yuna swamp, but not common.

55. *PELECANUS FUSCUS*.

(Cory, op. cit. p. 172.)

The first bird to be seen on entering Samaná Bay, and the last to be seen on leaving it. One morning I watched fully 600 of these great birds, after a gale from the east, diving for fish at the head of the Bay. They breed in a large colony on a rocky promontory and some islands, called the "Pelican cays," on the south side of the Bay, but I was never able to visit the place.

56. *TACHYPETES AQUILUS*.

(Cory, op. cit. p. 173.)

I observed this rakish-looking bird, with its enormous stretch of wing, several times in Samaná Bay, usually at a great height.

I do not think it breeds in the Bay.

57, 58. Of Gulls also I observed only one species, and only

one species also of Terns. They were neither of them common, and I did not succeed in obtaining specimens.

+59. *PODICIPES DOMINICUS*.

(Cory, op. cit. p. 185.)

In July, while shooting in the Yuna swamp, I several times obtained a good view of this little Grebe. It was very shy, and always dived or swam into the rushes on the first appearance of the boat.

XXVI.—On some Fossil Remains of Carinate Birds from Central Madagascar. By CHAS. W. ANDREWS, B.Sc., F.Z.S., Assistant in the British Museum (Natural History).

(Plates VIII. & IX.)

DURING his recent visit to Madagascar, Dr. Forsyth Major spent several months at Sirabé, in the centre of the island, a district well known for the abundance of fossil bones to be obtained there. A large number of excavations, most of them of considerable depth (12–15 ft.), were made, and a very fine collection of the remains of the extinct species of *Hippopotamus* and other mammals, of several species of *Aepyornis*, and also of numerous carinate birds was made. The present paper deals only with the last, which are mostly aquatic birds, though bones of a Rail and a Hawk also occur. By far the greater number of specimens were obtained from a depth of from twelve to fifteen feet in a marly layer, which Dr. Major believes to have been deposited on the bed of an old lake. Above this comes a layer of coarse gravelly character, consolidated with carbonate of lime and containing rolled and broken bones; this probably marks a volcanic outburst, accompanied by the breaking forth of numerous hot springs charged with carbonate of lime. Above this deposit there is another, about five or six feet in thickness, of black earth, in which also bird-bones occur, though comparatively rare.

In the marly layer the carinate remains are found in association with those of a rather small species of *Aepyornis*, the

Æ. hildebrandti of Burckhardt. In the black earth, on the other hand, this species does not occur, but remains of the somewhat larger *Æ. mulleri*, M.-Edw. & Grand., were found, as well as some well-preserved bones of the smaller and more slender Struthious bird, *Mullerornis agilis*, M.-Edw. & Grand. The difference between the species found in the deeper deposits and those in the more superficial black earth indicates that the former must be of considerable antiquity.

The most remarkable of the extinct types of Carinatae found by Dr. Major is a large Anserine bird (see Plate VIII.) which in those parts of the skeleton known presents many peculiar characters. The greater number of the specimens referred to this species were obtained from the marly layer, but the associated remains (here taken as the types) appear to have been found in the superficial deposit.

Remains of at least four or five individuals are included in the collection, and fortunately in one or two cases a number of bones are known to have belonged to the same skeleton. The best of these associated sets includes the right femur and tibio-tarsus, the proximal ends of the left coracoid and scapula and of the right metacarpus: these will be taken as the type specimens. Among the other more or less complete bones which can be referred with certainty to this species are an extremely well-preserved left tibia and femur, found in association, an imperfect metatarsus, and fragments of a sternum.

It may be stated at once that this bird is quite unlike any species now inhabiting Madagascar or, indeed, any other part of the world. Among fossil forms, as will be shown below, it resembles most nearly a large extinct Anserine bird, *Chenalopex pugil*, described by O. Winge* from remains found in the caverns of Lagoa Santa in Brazil. But even from that it differs so much in the form and proportions of its metatarsus that it is here regarded as representing a new genus, for which the name *Centrornis* is proposed; the specific name adopted for this form being *C. majori*, after its dis-

* Winge, Oluf, "Fugle fra Knoglehuler i Brasilien," E Museo Lundii, Bd. i., Copenhagen, 1888.

coverer. Examination of the distal extremity of the *tibio-tarsus* (Pl. VIII. figs. 1 & 2) shows at once that we are dealing with an Anserine bird; the very deep channel for the extensor tendons, spanned by a transverse bridge which stands in the middle line, together with the form of the articular condyles, are all perfectly characteristic of the group. There are, however, a number of notable peculiarities. The most striking of these are the extreme length and slenderness of the shaft and the relative shortness of the fibular crest. In its general proportions the tibia of *Chenopsis*, particularly of the extinct New Zealand species *C. sumnerensis*, Forbes, seems to approach our fossil most nearly; on the other hand, there are some important differences, *e. g.* in *Chenopsis* the fibular crest is much longer, and in other parts of the skeleton the two birds are very dissimilar.

The distal end resembles that of the tibia of *Cygnus* in the width of its articulation, but differs from it and approximates to the type characteristic of the more terrestrial Geese in the very slight degree to which it is bent inward. Comparison of the tibia with those of a number of Geese shows that, while differing from them in the great length and relative slenderness of the shaft, it in many respects approaches those of *Chenalopex*, *Plectropterus*, and *Sarcidiornis*. The similarity to the tibia of the first named is very great, both in the form of the articular condyles and of the tibial bridge, but the distal extremity is somewhat more inflexed and its articulation wider than in *Chenalopex pugil*. The tibia of *Sarcidiornis* differs from our fossil in the greater depth and narrowness of its intercondylar groove. *Cereopsis* is also different, the characters indicating a terrestrial mode of life being in that genus more highly developed than in any other Anserine bird.

The dimensions (in millimetres) of the tibia are given on p. 346, those of the tibiæ of some other species being appended for comparison.

In size, proportions, and general structure the *femur* (Pl. VIII. fig. 3) is almost identical with that of *Plectropterus*, being much less massive and having a more clearly-defined

	<i>Centronis majori.</i>		<i>Chenopsis atrata.</i>	? <i>Chenopsis summerensis.</i>	<i>Cygnus olor.</i>	<i>Plectropterus gambensis.</i>	<i>Cereopsis novae-hollandiae.</i>	<i>Chenalopex ægyptiacus.</i>	<i>Chenalopex jubatus.</i>
Length (exclusive of cnemial crest).	213*	215	175	213	183	192	155	138	88
Width of upper articular surface	20 approx.	21	19	18	20	22	19	14	10
Width of middle of shaft	11·5	11	9	12	12	11	9	8	5
Thickness of shaft. .	8·5	9	8	9	9	9	7	6·5	4
Width of distal extremity	21	20 approx.	20	24	24	21	18	15	9

* Type specimen.

neck than the femora of *Cygnus*, *Chenopsis*, or *Cereopsis*. Allowing for its smaller size, the femur of *Chenalopex ægyptiacus* is also similar, but has a somewhat straighter shaft and shallower groove between the head and the upper face of the trochanter. In *Sarcidiornis* the femur approaches the fossil still more closely, particularly in its slenderness and in the curvature of the shaft.

The degree of obliquity of the distal condyles, measured according to Milne-Edwards's method, is 69°.

The dimensions (in millimetres) of the femur, together with those of other Anserine birds, are as follows:—

	<i>Centronis majori.</i>		<i>Chenopsis summerensis.</i>	<i>Cygnus olor.</i>	<i>Plectropterus gambensis.</i>	<i>Cereopsis novae-hollandiae.</i>	<i>Chenalopex ægyptiacus.</i>	<i>Chenalopex pugil.</i>	<i>Sarcidiornis melanotos.</i>
Length	107	103	99	99	104	86	73	93	73
Width of proximal end.	26	25	27	27	26	24	18	..	16
Width of shaft	11	11	11	13	10	9·5	7	..	6
Width of distal end	26	27	26	27	23	17	..	15

Of the *metatarsus* (Pl. VIII. fig. 4), perhaps the most important bone for purposes of determination, only the distal

three-fourths of one specimen from the right leg and part of the shaft of another from the left are preserved. These bones belonged to the same individual, and are associated with portions of the tibia, coracoid, and other fragments, so that there is no difficulty in referring them with certainty to the present species.

Although about the proximal fourth is wanting, the specimen figured could easily be determined as Anserine, the form and size of the middle trochlea and its relation to the lateral ones being characteristic. Unfortunately the inner trochlea is broken away, but the position of its neck shows that it was reflected backward to a great extent. In comparison with the metatarsus of the Swans and those of most of the Gecse, the bone is very long and slender, and its shaft is of a uniform thickness for a much greater part of its length. The metatarsi of *Plectropterus* and *Chenalopex ægyptiacus* present similar characters; this is especially the case with the latter, which, except that it is relatively shorter and has a rather longer outer trochlea, is strikingly similar. *Chenalopex pugil* has a much shorter and stouter metatarsus, and seems to differ also in some points in the form of the distal trochlea. In *Sarcidiornis* the metatarsus is very much shorter and stouter, and the shaft thickens much more rapidly towards its upper end.

The actual length of the fragment is 110 mm.; the length of the complete bone may be estimated at approximately 130 mm. The width of the middle of the shaft is 8·5 mm., that of the middle trochlea 10 mm.

The dimensions (in millimetres) of the metatarsi of some other Anserine birds are given below for comparison:—

	<i>Sarcidiornis melanonotus.</i>	<i>Chenalopex pugil.</i>	<i>Chenalopex ægyptiacus.</i>	<i>Plectropterus gambensis.</i>
Length	71	120	86	130
Width of middle of shaft	7	? 8	6	10
Width of middle trochlea	6	? 8	6	11

The upper portion of a left *coracoid* belonging to the type is shown in Pl. VIII. fig. 5; other fragments of the bone also occur in the collection. The acrocoracoid is large and its neck short; on the inner surface, beneath the clavicular face, there is a deep pocket-like depression into which open pneumatic foramina. The clavicular process is short, and there is no subclavicular (supracoracoid) foramen. The bone, so far as known, is closely similar to those of *Plectropterus*, *Chenalopex*, and other Geese.

The proximal end of the typical *scapula* is figured on Pl. VIII. fig. 6, its outline being partly completed from a second, more perfect specimen, of rather larger size.

The acromium is large and prominent, as also is the coracoid facet. At the base of this latter, the outer surface of the bone is perforated by a pneumatic fossa; this also occurs in *Cereopsis*, *Anseranas*, and some species of *Anser*, but is wanting in *Sarcidiornis*, *Chenalopex*, and *Plectropterus*. The blade is broad and stout in proportion to the size of the head of the bone; unfortunately, even in the more perfect specimen the distal extremity has been broken away.

The following measurements of the coracoid and scapula may be useful:—

Coracoid: length from lower border of scapular facet to upper end of bone 31 mm.; width of glenoidal surface 13 mm.

Scapula: width of proximal end 23 mm.

The *sternum* is represented only by some small fragments.

Of the *humerus* only a few fragments remain: of these the most important are the greater portion of a shaft and a distal extremity. Judging from the former, the proportions of the whole bone resembled those of the humerus of *Plectropterus*, being much stouter than the humeri of *Sarcidiornis* and *Chenalopex*. The diameter of this shaft near the middle point is 13 mm. The distal extremity seems to have been relatively narrower and most like that of *Sarcidiornis*, except that the olecranon fossa is very shallow. The greatest width of this specimen is 30 mm.; it did not belong to the same individual as the shaft above mentioned.

A complete *radius* closely similar to that of *Chenalopex aegyptiacus*, but relatively a little more slender, is preserved.

The various grooves and muscle-attachments are rather better marked in the fossil than in the living form; this seems to be the case also in *Chenalopex pugil*. This specimen is 24 mm. in length. Compared with the radius of *Phœnicopterus*, which in length it resembles, it is found to be much stouter and to differ in many other respects.

The proximal three-fourths of a right *ulna* wanting the olecranon process, and part of a left, correspond in size with the above-mentioned radius. They also agree closely in structure with the same bone in *Sarcidiornis* and *Chenalopex*, though, as might be expected, in the larger bird the muscle-impressions, particularly the insertion of the *brachialis anticus*, are more strongly marked. The largest diameter of the middle of the shaft is 10 mm.

Perhaps the most characteristic bone of this bird is the *metacarpus* (Pl. VIII. fig. 7), but unfortunately only the proximal half of that from the left side is preserved, and even from this the free portion of the third metacarpal is broken away. Its most striking character is the presence of a very long spur-like process formed by the production downward and forward of the fused first metacarpal. The terminal half of this process has an irregular roughened surface which indicates that it was not invested with a claw-like spur such as occurs in *Chauna* and some Plovers, but was most probably covered by rough hardened epidermis, like the similar processes in *Chenalopex* and *Sarcidiornis*. The resemblance of this bone to the metacarpus of *Chenalopex pugil* is remarkable, the only differences perceptible being that in this bird the spur is rather stouter and more curved forward; the size is nearly the same. The spur on the wing of *Plectropterus* is borne on a process of the radial carpal, and is therefore not comparable with that of *Chenalopex* and *Centronis*.

The dimensions of the imperfect metacarpal are :—

Greatest width of upper end.....	31 mm.
Length of spur measured from tip to middle point of articular surface for first phalangeal of digit I.....	26
Width of metacarpal II.	9

A specimen of the first phalangeal of the second digit, measuring 46 mm. in length, probably belonged to this bird.

It will be seen from the foregoing description that in *Centronis majori* we have a Goose in many respects similar to *Sarcidiornis* and *Chenalopex*, but differing from them in its large size and in the great length of its legs. Indeed, judging from the slenderness of the metatarsus and femur and the slight degree to which the lower end of the long tibia is inflected, it seems probable that this bird was not a good swimmer, but was rather adapted for wading. The wings were long and powerful, and, being armed with a long spur, were no doubt formidable weapons.

The genus *Chenalopex* is represented by two species: *C. ægyptiacus*, inhabiting Africa and Palestine, and *C. jubatus*, found in South America. It is noteworthy that these birds are represented in the Pleistocene deposits of their respective areas by very large extinct forms, the former by *Centronis majori*, the latter by the so-called *Chenalopex pugil**. These, though differing one from another in the form of their legs, seem to have been almost identical in the structure of their wings, the similarity between their metacarpi being a remarkable instance of parallel modification.

By far the greater number (at least three-fourths) of the bird-bones in the collection belong to another Anserine bird considerably smaller than that just described. Of this form all the important parts of the skeleton, including the skull, sternum, pelvis, and the bones of the fore and hind limbs, are preserved, and in one or two cases a number of bones are known to have belonged to a single individual. The largest of these associated sets includes the skull, two or three vertebrae, humerus, radius, ulna, scapula, and coracoid. The metatarsus is unfortunately wanting in this instance, but since several specimens occur associated with bones identical in form with those represented, it is possible to refer them

* I am of opinion that it would be not only justifiable but desirable to make this species the type of a new genus, since, though in very many respects similar to *Chenalopex jubatus*, it presents important differences both in size and structure.

with certainty to this species ; even if this method of identification had been impossible, the great number of specimens of this particular type of metatarsus would be strong evidence that they belonged to this, the commonest species.

If only the wing-bones had been preserved, this bird would probably have been regarded merely as a somewhat robust variety of *Sarcidiornis*, a genus now occurring in Madagascar. The skull and metatarsus, however, show that this is not the case, but that we are dealing with a bird closely allied to, if not identical with, the Egyptian Goose, *Chenalopex ægyptiacus*. This species is widely distributed in Africa, but has never been recorded from Madagascar so far as I can ascertain. Considering the great abundance of the fossil remains of this, or at least a closely allied species, in these comparatively recent deposits, the complete absence of such a bird from the present avifauna of the island is remarkable. It is also noteworthy that no bones that can be referred to *Sarcidiornis melanonotus*, now a common species, occur among the fossils, so that it seems that this species must be of late introduction and that it has succeeded in displacing the older *Chenalopex*-like type.

The various specimens which I refer to the present species indicate that it was subject to considerable variation in size, and that, as in *Chenalopex ægyptiacus*, the differences were partly dependent on sex, the male being larger than the female. Some of the measurements given below will show that this was the case.

It will be unnecessary to give a complete description of this species, but will be sufficient to point out the chief characters in which it differs from *Sarcidiornis melanonotus* and approaches *Chenalopex ægyptiacus*.

The skull (Plate IX. fig. 1). Of the skull of the type specimen the whole of the cranial region together with fragments of the facial portion are preserved. Comparison with the crania of *Sarcidiornis* and *Chenalopex* shows at once that the fossil differs widely from the former and approaches the latter in a number of structural points, the chief of which are : (1) the shortness of the postorbital part of the cranium ; (2) the narrowness of

the upper surface of the skull between the orbits—in *Sarcidiornis* this region is very broad; (3) the truncation of the superior and posterior margins of the orbits by glandular impressions. In all these points the fossil is identical with the skull of the Egyptian Goose, and in fact differs from it only in some minor points, such as the slightly greater prominence of the basi-temporal platform. The anterior portion of the skull is too broken for comparison.

The *sternum*.—Of the sternum no complete specimen is preserved, but several large portions show that in all important respects it is like that of *Chenalopex*, though certain small differences, such as the complete absence of a *spina externa* and the greater distance between the tuberosities for the attachment of the coraco-scapular ligament, occur. The first of these points seems, however, to be of little moment, since in one of two specimens of the sternum of *Sarcidiornis* the *spina externa* is large, in the other absent.

The *coracoid* is unlike that of *Chenalopex aegyptiacus* in several points. Thus the shaft immediately below the pre-coracoid process is narrower, and the acrocoracoid process is, in some cases at least, less massive, so that the whole bone has a more slender appearance than in the recent bird. The peculiar flattening of the anterior face of the bone seen in *Sarcidiornis* is here wanting. In one specimen there is a distinct supracoracoid foramen closed by a very delicate strip of bone.

The *scapula* and *furcula* present no important peculiarities. In the latter, however, the ventral border at the symphysis is produced into a slight angular projection instead of being evenly rounded as in *C. aegyptiacus*; this may, however, be merely an individual peculiarity.

The average length of the greater number of coracoids measured is about 67 mm., but a few occur which are 7 or 8 mm. longer. A specimen of the coracoid of *Chenalopex aegyptiacus* (sex unknown) measured 67 mm.

The *humerus* is very similar to that of *Chenalopex*. The tricipital fossa beneath the head is, however, much deeper than in *C. aegyptiacus*, in this respect approaching *C. pugil*.

The humerus of *Sarcidiornis* is at once distinguishable by the relatively greater length and slenderness of its shaft. Measurements of a considerable number of humeri show that they are separable into two groups, the average length of the bone in one being 147, in the other 132 mm. The larger bones are very few in number, while the smaller are very numerous; presumably the former belonged to the male birds, the latter to the females.

The *radius* agrees in structure with that of *Chenalopex aegyptiacus*, though some specimens seem more slender. In *Sarcidiornis*, on the other hand, this bone is very different, the whole distal third being expanded, instead of there being a sudden widening close to the extremity of the bone. In this respect *C. jubatus* somewhat resembles *Sarcidiornis*. The length of the smaller radii is about 126 mm., that of the larger about 134 mm. The extreme range of variation is between 125 and 135 mm. The length of this bone in *Chenalopex aegyptiacus* and *Sarcidiornis* is about 122 and 126 mm. respectively.

The *ulna* is essentially like that of *Sarcidiornis* and *Chenalopex aegyptiacus*, but in the smaller olecranon process and in the proportions of the shaft comes nearest the latter. The average length of the smaller (female) ulnæ is about 130 mm., that of the larger (male) 140 mm.; the extreme range of variation observed is between 129 and 142 mm. In *Chenalopex aegyptiacus* and *Sarcidiornis* the length of the ulnæ measured is about 129 and 133 mm. respectively.

The *metacarpus* (Pl. IX. fig. 2) agrees precisely with those of the skeletons of *Chenalopex aegyptiacus* with which I have been able to compare it; on the other hand, it differs widely from that of *Sarcidiornis*. For instance, the proximal articulation, looked at from the side, is larger and more rounded in outline, and the spur on metacarpal I. is curved forward, instead of pointing directly outward as in *Sarcidiornis*. Again, in our fossil the interosseous foramen is larger than in *Sarcidiornis*, owing to the second and third metacarpals being less extensively fused at their distal extremities.

It may be remarked that the metacarpus figured by Newton

and Gadow (Trans. Zool. Soc. vol. xiii. pl. xxxiv. figs. 9 & 10), as the type specimen upon which the species *Sarcidiornis mauritianus* is founded, is indistinguishable from some of these Malagasy specimens, and therefore is also entirely unlike the metacarpus of *Sarcidiornis*: it really belonged to a species of *Chenalopex*, which may or may not be distinct from that under description. As in the case of the other bones of the skeleton, the specimens of the metacarpus fall into two groups, in one of which they average about 85 mm. in length, in the other about 76 mm.; these latter are the more numerous. In the larger specimens the spur is relatively larger, and these, no doubt, belong to the male birds.

The length of the type metatarsus of *Sarcidiornis mauritianus* is about 77 mm., that of a specimen of *C. aegyptiacus* 80 mm.

The *pelvis* differs widely from that of *Sarcidiornis*, and approaches that of *Chenalopex aegyptiacus* in many points; thus the whole post-acetabular region is wider, and, seen from below, shallower than in the former genus, and the centre of the urosacral vertebræ are wider and their transverse processes more prominent and separated by deeper fossæ. The greater width of the post-acetabular region is chiefly due to the expansion of the hinder portion of the ilia. In one specimen the ischiadic foramina are smaller than in the pelvis of *C. aegyptiacus*, with which I have compared it, but it appears that this is merely due to the extension of ossification in the connective tissue which closed the opening consequent upon age. The pectineal process is much more prominent in the fossil than in the recent form, and there are some slight differences in the fenestration of the sacral region.

The *femur*, the length of which is the same as those of *Sarcidiornis* and *Chenalopex aegyptiacus*, with which it was compared, differs from the former in being much stouter in the shaft and in possessing more massive articular ends; from the latter the main point of difference is the stouter shaft.

The *tibio-tarsus* is practically identical in form with that of *Chenalopex aegyptiacus*. It is in the *metatarsus* (Pl. IX. fig. 3) that the likeness to *Chenalopex* and the difference from *Sarcidiornis* of the present species are most marked. In the former this bone is relatively long and the shaft is slender in proportion to the width of the articular extremities; moreover, the inner trochlea is less backwardly directed than is usually the case in the members of the group that are good swimmers, and, in fact, the whole bone indicates that the bird is a good walker. In *Sarcidiornis*, on the other hand, the metatarsus is relatively short, the shaft square and thick in proportion to the articular ends, while the inner trochlea is strongly reflected backward, the whole indicating that this bird is a powerful swimmer. The fossil metatarsi are almost identical with those of *Chenalopex aegyptiacus*, the only difference being that the extremities are a trifle narrower in proportion to the length of the bone, and in some cases the muscle-impressions are more strongly developed. The length varies from 87 to 95 mm.; in *Sarcidiornis* the length is from 67 to 71 mm., in *Chenalopex aegyptiacus* about 85 mm.

The numerous slight differences between the skeleton of the fossil and that of *Chenalopex aegyptiacus* appear to be sufficient to justify us in regarding it as a distinct species, for which the name *Chenalopex sirabensis* may be adopted. It is, however, possible that when further remains of the bird described by Newton and Gadow as *Sarcidiornis mauritanus* are discovered it may prove to be the same.

There are also a number of bones of smaller Anserine birds. Of these the greater number belong to *Anas melleri*, or to a species which cannot be distinguished from it by any characters in the remains preserved. These include humeri, a coracoid, an ulna, and some metacarp. The length of the humeri ranges from 86 to 90 mm.; in a recent specimen the length is 88 mm.

There are also several bones of smaller Ducks. Of these a left femur seems to belong to *Anas erythrorhyncha*; the others cannot at present be determined, owing to the want of skeletons of the recent species for comparison.

One of the most notable specimens in the collection is an imperfect Ralline pelvis, which cannot be referred to any species now living in the island, but which is closely similar to that of *Tribonyx mortieri*, Gould, now living in Australia and Tasmania. This specimen was found in the superficial black earth.

This *pelvis* (Pl. IX. figs. 4 & 5) of this bird exhibits typically Ralline characters in the forms of the pelvic escutcheon and of the posterior renal fossæ. From the pelves of *Porphyrio*, *Ocydromus*, and other Ocydromine Rails (e. g. *Aphanapteryx*, *Diaphorapteryx*, and *Erythromachus*) it is at once distinguished by the fact that the ilia in the pre-acetabular region do not unite with the summit of the neural spines of the sacral vertebræ throughout their whole extent, but, as in *Fulica* and *Gallinula*, in their middle portion the dorsal borders curve down so as to leave the spines in that region laterally exposed. From the pelvis of *Porphyrio* the fossil is further distinguished by the concavity from side to side of the dorsal surface of the post-acetabular sacrum, and by the relatively greater width of the posterior renal fossæ. In *Ocydromus* the whole of the posterior half of the pelvis is narrower. In *Fulica* and *Gallinula* the length of the pelvis in proportion to its width is much greater. On the other hand, the points of difference from the pelvis of *Tribonyx* are trifling, the only noticeable ones being the rather greater width of the pelvic escutcheon, and, in correlation with this, the wider posterior renal fossæ, and the smaller size of the supra-acetabular ridges of the ilia. In the Australian bird, moreover, there is a rather deep depression in the ilia immediately in front of the acetabulum and above the pectineal process; this depression is wanting in the fossil.

There is no doubt that this bird is generically distinct from any form now found in Madagascar, but the similarity to the Australian *Tribonyx* is so great that it may be provisionally referred to that genus, though very probably, when the skeleton has become better known, it may prove to be distinct. The specific name *Tribonyx roberti* may be adopted for it.

The dimensions of the pelvis, together with those of *Tribonyx mortieri* and some other Rails, are as follows:—

	? <i>Tribonyx roberti</i> .	<i>Tribonyx mortieri</i> .	<i>Ocydromus</i>	<i>Porphyrio melanonotus</i> .
	mm.	mm.	mm.	mm.
Length of ilium	82 approx.	89	82	78
Least width of pre-acetabular region of pelvis	14	15	13	13
Width at antitrochanter	40	38	34	34
Width at anterior angle of pelvic escutcheon	36	34	32	31
Width at posterior angle of ditto	40	39	37	37
Length of sacrum	68	70	65	63

A beautifully-preserved left *tibia* (Pl. IX. fig. 6) possibly belongs to this species, since it is closely similar to that of *Tribonyx mortieri*. It differs, however, in the following points:—(1) The intercondylar groove is a little wider and shallower; (2) the inner condyle is less massive, so that the difference between the inner and outer condyles is more marked than in the Australian bird; (3) the shaft immediately above the extensor bridge is wider, and the bridge itself less oblique; (4) the fibular crest is relatively longer. It also, in most respects, resembles the tibia of *Porphyrio*, but is distinguished from it by the relatively larger size of the articular ends, the more marked inflection of the distal one, and the fibular crest is longer. The tibia of *Ocydromus* is much stouter and has a less incurved distal end than the fossil, which, in this respect, as well as in some other points, closely approaches the Fulicine type.

The dimensions of this tibia and of those of some other Rails are given below:—

	? <i>Tribonyx roberti</i> .	<i>Tribonyx mortieri</i> .	<i>Porphyrio melanonotus</i> .	<i>Ocydromus australis</i> .
	mm.	mm.	mm.	mm.
Length	143	135	145	121
Width at lower end . .	12	14	12	13
Width at middle of shaft	7	8	6	6

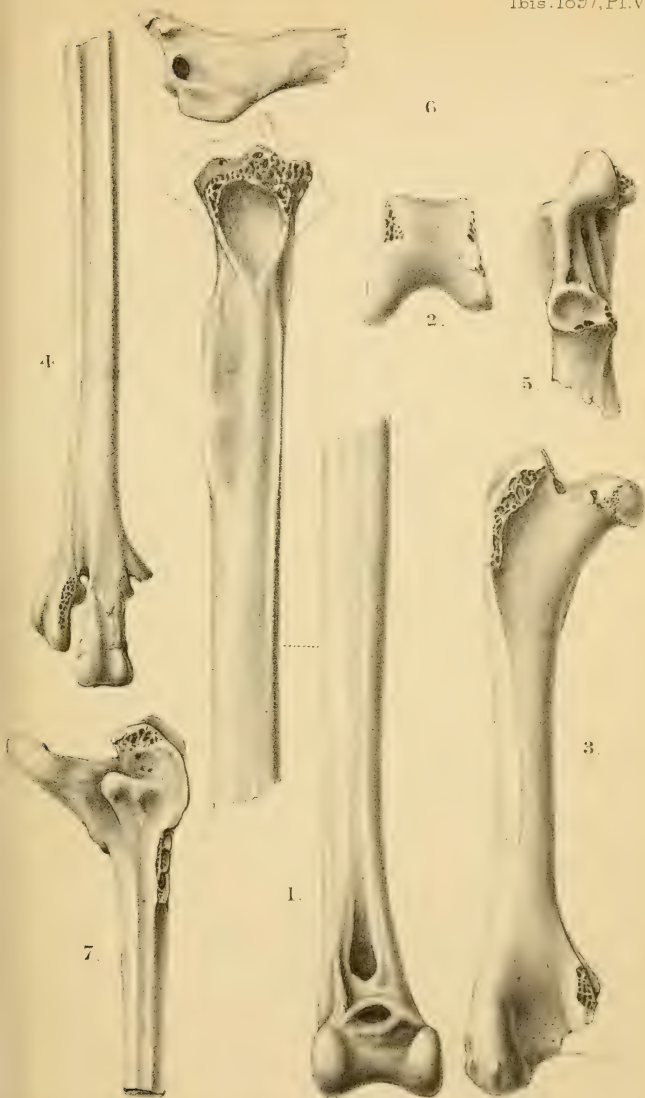
There is also a complete right *femur* (Pl. IX. fig. 7), which exhibits the usual peculiarities of that bone in the Rails. This may, perhaps, belong to the present species, but indicates an individual rather larger than that to which the pelvis belongs. The shaft is much more curved than in *Porphyrio*, and the extremities are more massive. The dimensions of this femur are:—

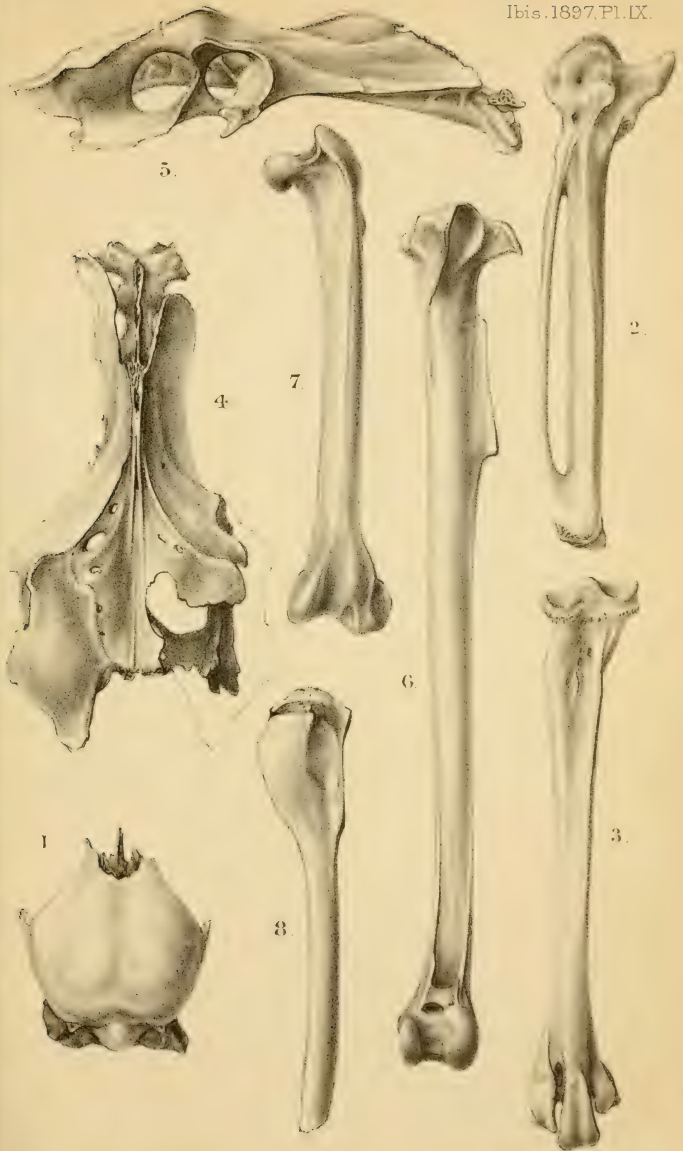
	? <i>Tribonyx</i> <i>roberti</i> .	<i>Tribonyx</i> <i>mortieri</i> .	<i>Ocydromus</i> <i>australis</i> .	<i>Porphyrio</i> <i>melanonotus</i> .
	mm.	mm.	mm.	mm.
Length	83	85	74	76
Width of lower end..	17	18	15	14
Width of shaft at middle	7	8	6	5·5

In addition to the above-described specimens, there are a number of odd bones, of which, in most cases, it is impossible to do more than determine the genus, at least until a more complete series of skeletons of Malagasy birds shall be available for comparison.

Among these bones are included a right humerus of *Ardea intermedia*; a right tibia of a Spoonbill, probably *Platalea tenuirostris*, Temminck; a left tibia of a Hawk, probably belonging to the genus *Astur*; its length is 97 mm., so that the bird was apparently about the same size as the male of *A. hensti*, Schlegel. Lastly, there is the proximal half of a left humerus (Pl. IX. fig. 8) of a very small species of *Plotus*. This specimen agrees closely with the humerus figured and described by Newton and Gadow (*loc. cit.* pl. xxiv. figs. 3-4) as one of the type specimens of *Plotus nanus*, and it must be referred to that species.

In conclusion, it may be remarked that the very large collection of bird-remains here described, together with great quantities of bones of *Æpyornis*, and also of various mammals, including an ape-like form (*Nesopithecus*) new to science, was obtained under circumstances of great difficulty and danger. The swampy nature of the deposits made the





J. Green del et lith.

Mintern Bros. imp.

Figs 1-3. *Chenalepex sirabensis*. Figs. 4-7. *Tribonyx roberti*.

Fig 8. *Plotus nanus*

task of excavating very arduous, and the work was frequently interrupted for days at a time through the growing hostility of the natives. Dr. Forsyth Major and his companion, M. Robert, are therefore the more to be congratulated that, under such unfavourable conditions, they have added so much to our knowledge of the extinct fauna of Central Madagascar.

EXPLANATION OF THE PLATES.

PLATE VIII.

Remains of *Centronis majori* (p. 344).

- Fig. 1. Right tibio-tarsus, from front (figured in two halves).
2. Right tibio-tarsus, distal articulation.
3. Right femur, from front.
4. Right metatarsus, from front.
5. Left coracoid, upper end.
6. Left scapula.
7. Right metacarpus, proximal portion.

All the figures are of the natural size, and, with the exception of the metatarsus, are drawn from the type specimens. The dotted outlines are drawn from more perfect bones.

PLATE IX.

- Fig. 1. Skull of *Chenalopex sirabensis* (p. 355).
2. Metacarpus of ditto.
3. Metatarsus of ditto.
4. *Tribonyx roberti* (p. 356). Pelvis, from above.
5. Ditto. Pelvis, from side.
6. ? Ditto. Left tibio-tarsus.
7. ? Ditto. Left femur.
8. *Plotus nanus* (p. 358). Left humerus.

All the figures are of the natural size. In figs. 4 and 5 the dotted outlines are drawn from the opposite side.

XXVII.—On Changes of Plumage in some of the Typical Weaver-birds. By A. G. BUTLER, Ph.D.

ABOUT the year 1888 I purchased two pairs of the so-called Red-billed Weaver-bird (*Quelea quelea*) and a male of Russ's Weaver (*Quelea russi*), and turned them out together in one

of my large aviaries, where they have regularly come into plumage year after year, without any change worth recording, until the early summer of 1896, when one of my males of *Q. quelea* appeared in the breeding-plumage of *Q. russi**. I wrote to Mr. Abrahams respecting this unexpected metamorphosis, asking whether he had ever noticed a parallel case, and he replied saying that he would take an early opportunity of talking the matter over with me. He evidently imagined that I must have been mistaken.

It will be seen, on reference to my 'Foreign Finches in Captivity,' that, writing in 1895, I speak of a male of *Q. russi* quarrelling with cocks of *Q. quelea* (*vide* p. 316), and from that time to the present I have added no Weavers to that aviary. There can therefore be no possibility of my having made a mistake.

When the two "species" are compared, it will be seen that the chief difference between them consists in the colouring of the mask on the face, which is black in *Q. quelea* and buffish in *Q. russi*. The two forms come mixed together in the same consignments from Africa, and doubtless are caught together. It would therefore seem that *Q. russi* is a mere partial albinism, due to weakening of the pigment-cells.

In the autumn of 1895 I purchased a number of examples of *Pyromelana* out of colour, some of which, however, were showing the first indications of change of plumage; among them were five males of *P. franciscana* and six of *P. afra*. All these birds continued to develop their nuptial plumage up to the first frosts, when the change was arrested and the bright colouring gradually receded from the feathers, so that in about six weeks the birds had all resumed their winter plumage.

Several views have been put forward to account for the change of plumage in birds; but when the colouring gradually comes and again recedes from the same feathers, the

* This bird died during its change into summer plumage, in April of the present year; it had already acquired for the second time the characteristics of Russ's Weaver. In *Quelea* this change is effected by a complete moult.

casting of a disguising film will not account for the second operation.

In *Pyromelana* the change of plumage is very slow; the feathers daily gain in intensity, the pale buff of the underparts getting scarcely perceptibly deeper, until at length the velvet-black and fiery orange in *P. franciscana* appear as mere spots or shaft-streaks, which gradually expand fanwise towards the outer fringes of the feathers. This spotting, however, is very uneven, some feathers being developed in advance of others, so as to give the bird a very patchy appearance. In the bright yellow and black plumage of *P. afra* this is even more noticeable.

At the change of plumage the flank-feathers and upper tail-coverts are moulted out, being replaced by long soft feathers, which droop over and almost hide the tail: but none of the feathers of the head, back, breast, and belly are lost; they simply undergo a gradual change of colour.

If it is possible, and we know that it is, for the plumage of birds to be seriously affected after death, there is no reason for asserting that a perfect feather possesses no vitality, and is therefore incapable of change of colour.

Perhaps one of the most marked alterations in coloration after death which I have noticed is that which takes place on the breast of the male Gouldian Finch (*Poephila mirabilis*). In life the breast is vivid ultramarine-blue or very bright pansy-blue; after death the blue gradually fades out of the feathers, leaving them of a dull lilac.

XXVIII.—*On the Nesting of Cassicus persicus, Cassidix oryzivora, Gymnomystax melanicterus, and Todirostrum maculatum.* By Dr. EMIL A. GOELDI, C.M.Z.S., Director of the Museum in Pará.*

1. *CASSICUS PERSICUS* and *CASSIDIX ORYZIVORA*.

The nests of most Brazilian birds are by no means easily

* [For a previous article on a similar subject by Dr. Goeldi, see 'Ibis,' 1896, p. 299, and observe that the editorial footnote at the commencement of that article is intended to refer to Koenig-Warthaussen in J. f. O. 1868, and *not* to Dr. Goeldi's excellent notes.—EDD.]

to be found, and travellers who do not devote much time to the subject will generally see very little of the birds' breeding-habits. There are, however, exceptions, and one of these is offered by *Cassicus persicus*. This is by far the most predominant Cassique in Lower Amazonia and Guiana, and colonies of it, consisting of a more or less considerable number of pendent nests dangling on the branch-ends of the trees, are to be seen everywhere, and are sure to strike even the most casual tourist's attention on board the Amazonian steamers. Here, in Pará, *Cassicus persicus* is a daily visitor in every large orchard, and though the suburb of Nazareth is to-day much more densely inhabited than it was when Mr. Wallace wrote his most interesting book, I know of a colony of "Japiims" with a dozen nests on a high tree near the course of two of the most frequented roads of this suburb, and only some 60 steps distant from our museum.

The bag-nests of *Cassicus persicus* are, in comparison with those of *Ostinops decumanus*, shorter and more cylindrical. Two specimens brought by me from Amapá in 1895 are only from 40 to 42 cm. long and 12 cm. wide in the upper part, and 15 cm. in width in the lower part. The entrance-hole is stirrup-shaped and situated on the upper portion. It measures 15 cm. in length and about 10 cm. in breadth.

The material of these bag-nests consists exclusively of dry fibres of the assaý-palm-tree-leaves (*Euterpe oleracea*), which are woven by the bird into a fabric of very great strength, so that it is almost impossible to tear it. The fact that in Amazonia the material usually employed consists of assaý-leaves is very well known to everybody in the country. This fact becomes specially interesting to naturalists who remember that the range of *Cassicus persicus* reaches southward to Bahia, *i. e.* into a region where the assaý-palm does not grow. We know, from the description given by Prince Maximilian zu Wied-Neuwied (Beitr. iii. p. 1239), that the material employed by this bird in the coast-zone of Bahia consists of threads of *Tillandsia* ("Barba de velho") and of similar *Bromelia*-fibres. This statement agrees entirely with my observations in Southern Brazil as regards

Ostinops decumanus and *Cassicus hæmorrhous*. *Tillandsia*-threads are softer and of a greyish colour, while fibres of assaý-leaves are more rigid and of a straw-colour—so that *Cassicus*-nests of unknown origin may be at any time certainly recognized by their materials as to whether they come from the southern or from the northern parts of Brazil. The life and growth of these *Tillandsia*-fibres are not always interrupted by their employment in the nests. I have often observed instances of these Bromelias growing under such circumstances.

The eggs of *Cassicus persicus* were not obtained by Prince zu Wied. Whether they have been more recently procured I am not able to say from the literature at my disposal. They are of a very pale yellow-reddish colour, almost regularly covered with pale neutral-tint signs and points in two layers of different intensity. The measurements of two Guianan eggs are :—(1) Long. axis 25·5 mm., transv. axis 19 mm.; (2) long. axis 27·5 mm., transv. axis 18 mm.

In a letter dated Sept. 12th, 1896, Mr. Selater writes to me :—" We have been recently informed that *Cassidix oryzivora* is parasitic on *Cassicus persicus*—like *Molothrus*. Do you know anything about this matter? " Now I really know something about this question, and have even published some remarks concerning it some years ago*.

In Southern Brazil it is well known that *Molothrus bonariensis* lays its eggs in the nests of other birds, especially in that of *Zonotrichia pileata*. Its larger relative (*Cassidix oryzivora*) lays its eggs in the nests of birds of similar proportions to itself, especially in those of *Ostinops decumanus*, and probably also in those of *Cassicus hæmorrhous*. As regards *Ostinops*, there is absolutely no doubt; I have

* In my little book 'Aves do Brazil' (Rio de Janeiro), written in 1892 and printed in 1894—a book which has been condemned by 'Natural Science' as "being of no value as a contribution to science." If, however, the editors of that periodical would give themselves the trouble to study it a little more from the biological standpoint, and not merely through anatomical and systematical spectacles, they would, perhaps, be able to record a somewhat more favourable opinion of it.—E. A. G.

verified it myself, and in my collection of birds of the Serra-des-Órgãos Mountains, Rio de Janeiro, are specimens of the eggs of *Cassidix* taken with my own hands out of nests of the *Ostinops*. I have seen the eggs of both together in one nest, and have several times reared young ones of the *Cassidix* along with their yellow-tailed brethren. The little *Molothrus* has, besides some others, the popular name "Parasita"; *Cassidix oryzivora* is called "Melro" in Rio de Janeiro, in Northern Brazil "Graúna" (an abbreviation of the Tupí words "guíra-úna" = black-bird)*.

When I arrived in Pará, I was surprised at being told by several persons that the "Graúna" has the habit of laying its eggs in the nest of the "Japiim" (= *Cassicus persicus*). I had thus an interesting confirmation of my own observations in Rio de Janeiro, and have come to the conclusion that *Cassidix oryzivora* is parasitic everywhere, choosing in North and South Brazil for its eggs the nests of the respective *Cassidine* species, the size of which agrees best with its own. There is thus in *Cassidix oryzivora* a remarkable example of the adaptation of a bird with cuckoo-habits to different local faunistic relations, and a nice parallel to the phenomenon offered by *Cassicus persicus*, which changes its nesting-material in accordance with the change of plants in different latitudes†.

I may add that *Cassicus persicus* had eggs when we were in Comaný, between October 11th and 26th, 1895, and that

* As regards popular names much care is always necessary. The same name—"Graúna," for example—is used in Southern Brazil for *Aphobus chopi* and on the island of Marajó for *Amblycercus solitarius*.—E. A. G.

† Just as the material used by *Cassicus persicus* for its nest in Bahia (and southwards) is different from that used by the same bird in Pará, the material employed by *Ostinops decumanus* in these two countries respectively is also different. I have stated that in Southern Brazil *Ostinops* uses exclusively the "Barba de velho" (*Tillandsia usneoides*), and that these southern nests are of a greyish colour. On the Amazon the material employed by this bird is composed of—(1) a black hairy substance, very like horsehair or delicate and elongated roots [which botanical researches in the Pará Museum prove to be a most interesting lichen, but of which it is not yet possible to ascertain the exact

we met with young birds in the nests during our residence in Amapá from the 26th October to 11th November. The breeding-period in Southern Guiana agrees with that in Pará. We know from the Prince zu Wied (*op. cit.* p. 1240) that he generally observed the young birds in the nests found by him on the Rio Belmonte, Bahia, towards the end of December. A slightly earlier breeding-time in the northern regions compared with the southern Brazilian States seems to me to be a generally prevailing phenomenon, of which I have a number of instances.

2. *GYMNOMYSTAX MELANICTERUS*.

The splendid yellow-and-black-coloured, Oriole-like Icterid, *Gymnomystax melanicterus*, called "Aritaná" here in Lower Amazonia, is a real ornament of the campos-region of Marajó and Southern Guiana wherever these districts are traversed by rivers. Damp meadows and muddy shores, alternately covered and uncovered by the tides, are the favourite resorts of this interesting bird of charming appearance. It is of confident demeanour and fond of human residences, breeding regularly in the immediate vicinity of the fazendas. In its character it reminds me much more of the "Vira-bostas" (*Molothrus*) than of the genuine Trupials and Cassiques; it frequents cattle-settlements, is often engaged on the ground with cattle-dung, and walks about there for quarters of an hour together in the manner of the European Starling. I have been recently told that its range increases with the extension of cattle-breeding, and that it makes its appearance along with cattle in regions where it has not been seen before, *e. g.* in the Município de Mazagão, in the north channel of the Amazonian estuary. When flying it calls *wrég-krég*; when

systematic name]; (2) of the dry and tender roots of certain orchids of a yellowish colour.

As the proportion of both substances is almost as two to one, and the black root-like lichen is largely predominant, the general aspect of these northern nest-bags is of a *blackish* colour, contrasting in a striking manner with the grayish *Tillandsia*-structures of Southern Brazil.

in good humour and perched near its nest it emits a song like *tíng-tíng-wrég-wrég-gri-gri*, and is, in a few words, a bird not easily to be overlooked by a visitor to a Marajó cattle-settlement, making itself known as well by its appearance as by its voice.

Mr. Selater writes in vol. xi. of the 'Catalogue of Birds in the British Museum' (p. 361):—"This remarkable form has been often placed with the *Agelæinæ*. But the slightly

Fig. 1.



Nest of *Gymnomystax melanicterus*.

decurved culmen and lineiform mesorhinium justify us, I think, in removing it to the *Icterinæ*, with which it agrees in style of plumage, as it does also, I believe, in habits and mode of nesting." As I could not find anything published about the mode of nesting of *Gymnomystax*, and as Mr. Selater has also kindly informed me of the absence of any authentic observations on the subject, I have made all possible efforts to clear up the missing link.

Frankly speaking, I had for a long time the same opinion as to the correct position of *Gymnomystax* as is indicated above. But I became somewhat doubtful when I noticed the Starling- or *Molothrus*-like mode of life, and the results of my observations of the last two years as to the breeding of this bird indicate an aberrant and rather isolated position of *Gymnomystax* in the Icterine group.

I have two nests of the "Aritaná," both from the island of Marajó. The first is a present from a friend, and was taken in December 1895 on his extensive cattle-settlements; the second I took myself during a recent journey to the same locality, Cabo Magoary, in August and September, 1896. The photograph of the first nest (fig. 1, p. 366) will give a good idea of it.

These nests are open and porringer-shaped, similar to those of certain Thrushes, and quite different from the bag-nests of *Ostinops* and *Cassicus*, so far as I know them, and from other constructions of the Icterinæ that we see figured in many ornithological works. The material consists of grass-leaves (whole and longitudinally split), slender roots, and fragments of small climbing plants*. There is no softer lining.

The second nest, taken by myself at Fazenda Livramento, was situated in the fork of a branch and well hidden in the foliage of the crown of a "moregeira-" tree (*Andira* sp. inc.), some 8 or 10 m. above the ground. The tree was distant not more than, perhaps, some 30 steps from the central buildings of the above-mentioned fazenda, in the open farm-yard, and in the midst of a considerable and constant crowd of men, horses, and cattle. Nevertheless the "Aritaná" is very circumspect in the vicinity of its breeding-tree, and, when it finds itself observed, does not readily approach. The discovery

* The slender roots with exquisite nodules, which can be perfectly perceived on the photograph, and play an important part in this nest, are those of an interesting aquatic plant, *Marsilia polycarpa*, Hooker et Grev., the nodules being the macro-sporangia. The climbing plant used in both nests is one of the Cucurbitacæ. I am indebted for this information to my colleague, Dr. J. Huber, the Botanist of the Pará Museum.—E. A. G.

of this nest was only effected by patiently waiting for some hours in a hidden corner.

As regards the eggs of *Gymnomystax*, I have been somewhat unfortunate. The eggs which were sent to me together with the first nest arrived broken and do not allow of measurements. The fragments, however, show a bluish-white surface, with large, dark, irregular spots; they give me the idea of some resemblance to a smaller version of the egg figured as that of *Icterus cristatus* by Thienemann (Abbildungen von Vogeleiern, pl. xxxvii. fig. 7). The second nest contained on the day of my arrival at Livramento (August 28th) three naked young birds, which I did not interfere with. On my return to the locality a fortnight after, I found the nest empty and the birds gone.

+ 3. TODIROSTRUM MACULATUM.

It seems that since the time of Prince Maximilian zu Wied nobody has written about the breeding-habits of any member of the genus *Todirostrum*, which belongs to the smaller forms of the Tyrannine subfamily Platyrhynchinae. The Prince writes (Beitr. iii. p. 967) of the nest of *T. poliocephalum*:—"Ein solches Nest, welches wir in der Nähe des Flusses Parahypa in einem hohen *Gamelera*-Baume (*Ficus*) fanden,—man versicherte mich, es gehöre diesem Vogel an,—war von Baum- und Pflanzenwolle erbaut, von länglich-kuglicher Gestalt, oben über geschlossen, und vorn mit einer sehr kleinen Oeffnung zum Eingange des Vogels versehen; es wird in meinen Abbildungen zur Naturgeschichte Brasilien's mitgetheilt werden"*.

Todirostrum maculatum—a common bird, and a daily guest in the gardens of Pará—is well known by the people under the trivial name of "Ferreirinho" (little smith). There is almost no hour of the day when we do not hear the characteristic song of this little bird, which is ever busy among the shady foliage of the fruit-trees. Its song may be imitated by the syllables *tsi-tsiridi-tsiridi-tsi-tsi*, and may at the same time be compared to the sound produced by winding up a watch.

* It seems that this promise remained unaccomplished, as in my copy of the 'Abbildungen' there is no plate referring to the nest in question.—E. A. G.

Fig. 2.



Nest of *Todirostrum maculatum*.

In February, 1896, I discovered a nest in our museum garden, only some ten steps from the building. It was near the end of a short branch of an "abin"-tree (*Lucuma cainito*), at a height of about seven metres, rather well hidden, and more in the central than in the outer part of the crown of the tree. The nest, of which the photograph (fig. 2, p. 369) gives an adequate idea, is of bag-like construction, with a lateral entrance-hole. This hole, which is small and circular, is provided with a protecting roof. The material consists essentially of fibres of palm-tree leaves (cocoanut and "inaja") and particles of straw. Many of these fibres hang down in a negligent manner to an extent equal to the length of the nest, which, in comparison with the diminutive bird (certainly one of the smallest forms of the Tyrannidæ), must be called a very large one. The upper part, with the connection to the branch, is produced into a long conical horn.

Observing that the "Ferreirinho" was breeding, I resolved to take the nest and its contents on February 22. I obtained male, female, and eggs. These eggs, two in number, were still nearly fresh. They measured:—(1) 16 mm. long. axis, 11·5 mm. transv. axis; (2) 16·5 mm. long. axis, 11·5 mm. transv. axis. The point of section of the two axes for both eggs was 6 mm. distant from the blunt pole. The ground-colour is a pure white, but, having a large number of delicate and small rosy points, becomes of a pale rosy tinge. They are frail and minute objects, but well proportioned to the dimensions of the graceful little bird, a genuine Liliputian Tyrant, with a white iris.

I suppose it was the second laying, and that the former, corresponding to the months September to November, had probably escaped my attention.

In Pará I have never seen any other species of *Todirostrum* than *T. maculatum*; but on the island of Marajó I found another, easily distinguishable from being entirely yellow on the lower surface. I believe it to be *Todirostrum cinereum*, figured by Spix (Av. Brasil. pl. ix. fig. 2) under the name *Todus melanocephalus*.

October, 1896.

XXIX.—*Diagnoses of Thirty-six new or little-known Birds from British New Guinea.* By C. W. DE VIS.

THE birds which I propose to describe are from the collections made under the leadership of Sir William Macgregor by Mr. A. Giulianetti, during his late journey across British New Guinea, from the Mambare River to the Vanapa River. The passages in the descriptions within inverted commas are transcripts, with here and there slight modifications, of Mr. Giulianetti's notes on the labels.

An enumeration of all the species occurring in the general collection is reserved for an appendix to the Annual Report to the Queensland Parliament on British New Guinea for the present year*.

Fam. PSITTACIDÆ.

1. *NEOPSITTACUS VIRIDICEPS*, sp. nov.

Body above, chin, and throat rich dark green, with a very feeble brown tint on the occiput and nape, and with scarcely perceptible paler shaft-streaks; ear-coverts mostly stained

* Count Salvadori has kindly sent us the following translation of a letter addressed to him by Sign. Giulianetti concerning this remarkable expedition:—

"I have just come back from an expedition into the interior of S.E. New Guinea. I passed the months of September and October and part of November on Mount Scratchley. At my camp, at 12,200 feet, the birds were very numerous, and many belonged to species which I had never seen near the coast. I obtained, among others, a Woodcock, a Snipe, and two Ducks. There was a Blackbird very common, and also a kind of *Anthus*.

"On the 6th of September I killed two specimens of an apparently new Bird of Paradise; it has the general plumage black and eight of the remiges yellow. Round the eyes there is a naked caruncle as large as a twopenny-piece, of an orange-yellow colour. The bill is similar to that of *Astrarchia*, but narrower and more pointed. [Evidently the new Bird of Paradise described by Mr. De Vis as *Macgregoria pulchra*, Ibis, 1897, p. 251, pl. vii.] I found also a *Parotia*, with the frontal star not white, but coloured like the rest of the feathers of the body; only a few small feathers over the nostrils are yellow. [See *Parotia heleneæ*, below, p. 390.] I obtained also specimens of the genera *Epimachus*, *Astrarchia*, *Diphyllodes*, and of a *Paradisea* allied to *P. raggiana*, but different, being smaller

with red and streaked with yellow; middle rectrices dark green to tip, laterals rather paler and very narrowly edged with yellow round the tip, basal three-fourths of their inner webs red, abruptly defined from the green beyond; breast and middle of abdomen red; flanks and sides of breast pure green, but paler than the throat; under tail-coverts pale green, covering the orange-red bases; metacarpal edge green; under wing-coverts, lesser series as the breast, greater series and inner webs of remiges for basal two-thirds rather paler and duller red; wing beneath deep fuscous; extreme outer edge of outer and inner edge of inner primaries very narrowly edged with yellow: "iris light red; beak orange, yellow at tip and beneath; feet grey." Length 178 mm., wing 100, tail 95, bill 13, tarsus 11.

"Female: Mt. Scratchley, at 12,200 feet, Oct. 5th, 1896; contents of stomach, fruits."

The green and practically uniform head, the well-defined area of red on the lateral rectrices, the uniform middle rectrices, and the almost entire absence of yellow on the under surface of the tail, render this bird quite distinct from *N. muschenbroeki*, Rosenb. On the occiput there is an unpaired spot of orange feathers, no doubt a sport.

Fam. FALCONIDÆ.

2. ACCIPITER ERYTHRAUCHEN, Gray.

Young male. Above fuscous brown slightly washed with grey, all the feathers with rufous edges, which increase in

and having the feathers of the back greyish yellow. Altogether I collected 220 birds; but I was ill for some time and suffered for want of food, and for a long time I remained with only a single native with me. I visited a village on Mount Scratchley, and was well received by the natives. Next April I propose to penetrate again into the interior and to put my camp on Mount Albert Edward, and after having collected on the high plateaux of the mountain I mean to make excursions in the valleys on the different sides. If I succeed in my projects, I feel confident that I shall find new Birds of Paradise, as it seems that the different species are very locally distributed.

"The collection acquired during my last expedition has already been sent to Brisbane."

width and brightness caudad; some of the feathers of the hind neck with their white bases apparent, others passing into a chestnut-brown to form an incipient collar; edges and tips of secondaries and tips of inner primaries rufous; tail fuscous grey, with several (twelve) fuscous bars on the inner webs of the quills, the tips of the quills rufous, interspaces pale fawn on inner half of inner web; chin, throat, and upper breast isabelline grey, with longitudinal streaks, narrow on chin and throat, broader on upper breast; lower breast washed with rufous and its streaks rufous brown; abdomen and under tail-coverts very pale rufous, with rufous streaks; thighs uniform rufous; side of throat isabel-grey, with broad fuscous streaks; cheeks similar; ear-coverts and a spot behind upper angle of eye fuscous brown, the latter with a rufous line above it; under wing-coverts pale rufous, with rhomboidal fuscous spots in the centres; inner webs of remiges pale cinnamon; flanks buffy white, with broad rufous-brown bars; tail beneath grey: "iris dull yellow; beak black; feet light yellow." Length 280 mm., wing 176, tail 145, tarsus 45, culmen from base of cere 12.5.

"Neneba, Mt. Scratchley, at 4000 feet, Nov. 11th, 1896."

In colouring this bird seems to be very like the unknown young of *A. erythrauchen*, to which I refer it.

3. *Circus*, sp. inc.

Young male. Above fuscous brown, with broad rufous edges, upper tail-coverts uniform; head and neck black; tail above fuscous, with several (twelve) narrow bars, beneath paler, with lighter bars paling to white at base; beneath white; pectorals with broad rufous edges, shaft-streaks fuscous, gradually widening from chin to lower breast, and breaking up into two broad bars on abdomen and under tail-coverts; cheeks white, with broad blackish streaks; wing-coverts above and below and metacarpal edge rufous, with sagittate fuscous centres; remiges with white bars (nine) on inner web; thighs white, stained with rufous and barred with black: "iris yellow; beak grey, point black, cere yellow-green; feet yellow." Length 460 mm., wing 288, tail 245, culmen 25, tarsus 70.

"Neneba, Nov. 1st, 1896 ; contents of stomach, birds. Native name 'Kigo.'"

From the proportions of this young Harrier we have reason to refrain from uniting it to *C. spilothorax*, Salvad. & d'Alb. ; it is still more difficult to identify it with *C. maillardi*, Verr., *C. wolffi*, Gurn., or any other described species, but until the juvenile state of *C. spilothorax* is more certainly ascertained it is prudent to leave the identity of the present bird an open question. The fourth primary is decidedly the longest, and the fifth is notched on the base of the outer web.

Fam. MUSCICAPIDÆ.

4. *MONARCHA DIVAGA*, sp. nov.

General colour brown-black ; feathers of head squamate, with brilliant steel-blue lustre ; back, upper tail-coverts, edges of median rectrices, scapulars, wing-coverts, edges of inner remiges, side of head, and a broad band across the upper breast with duller steel-blue reflections ; under surface of wing and tail paler : "iris brown ; bill and feet black." Length 215 mm., wing 115, tail 110, culmen 24, tarsus 18.

"Female : Boirave, July 14th, 1896 ; contents of stomach, insects. Native name 'Divaga.'"

In this bird the rictal bristles are very strong and reach to the tip of the bill, and the edges of both mandibles are obtusely serrated.

5. *RHIPIDURA NIGRIFRONS*, sp. nov.

Above bluish ash-grey ; front (broadly), a broad supra-ciliary band curving over ear-coverts, face, chin, and throat jet-black, with a faint metallic lustre ; a line from behind the eye, separating the black throat from the grey nape, and all beneath white ; median wing- and primary-coverts with white tips, forming two bars across the wing ; upper tail-coverts and tail black ; four outer rectrices on each side with white tips graduated in extent ; wing above dark brown, the quills narrowly edged with bluish grey ; metacarpal edge and adjacent under wing-coverts fuscous, rest of the coverts

white, with fuscous bases; under surface of wing brown, of tail fuscous: "iris brown; beak black; feet grey." Length 163 mm., tail 83, wing 76, culmen 10, tarsus 17.

"Male: (locality not given) July 7th, 1896; contents of stomach, insects."

This bird seems to have its nearest ally in the New-Hebridean species *R. melanolema*, but the differences between the two are sufficiently obvious.

6. *RHIPIDURA ALBICAUDA*, sp. nov.

Above, head and neck rufous brown; back, rump, and upper tail-coverts chestnut; face, ear-coverts, and upper throat greyish brown, becoming fawn on the lower throat, breast, and abdomen; lower abdomen, crissals, and under tail-coverts chestnut; inner greater and primary wing-coverts rufous, with brighter rufous tips; wing fuscous brown, with deep rufous edges; tail sordid white, with white shafts; metacarpal edge rufous: beak black, lower mandible pale horn with dark tip; legs and feet pale horn. Length 157 mm., wing 68, tail 88, culmen 6.5, tarsus 22.

The description is from a spirit-specimen. When wet the edges of the rectrices are on the upper surface pale sienna-brown to a greater or lesser extent, the medians showing little more than the shaft white; traces of this brown remain on the tips when dry.

7. *RHIPIDURA OREAS*, sp. nov.

Somewhat resembling *R. maculipectus*, but smaller, with both upper and under surface grey and a feebler bill. General colour above and below grey washed with brown; above uniform; wings and coverts dark brown, two or three of the median and all of the greater series with small white tips; tail fuscous brown, strongly rounded, two outer rectrices tipped with white, the outermost largely, the penultimate very narrowly; front and face black; lores, eyebrow, upper ear-coverts, chin, upper throat, and a patch behind lower coverts white; lower breast and abdomen whity brown, some feathers on upper breast with large white tips; under wing-coverts fuscous, with large tips of greyish white;

wing beneath ashy brown, edges of inner webs more ashy : upper mandible dark brown, lower pale, with dark tip ; legs and feet dark brown. Length 145 mm., wing 77, tail 92, culmen 12, tarsus 17.

Described from a spirit-specimen.

8. *PETRÆCA BIVITTATA*, sp. nov.

Above dull dark grey, on the forehead a large silky-white spot ; wings dark brown, tips of quills edged with grey ; inner secondaries and tertials, especially the last tertial, edged with greyish white on the apical half of the outer web, forming an obscure cross-band ; inner primaries with a white spot near the base, forming a second oblique band ; primary-coverts with a broad white band across their centres ; beneath down to upper breast smoky grey, rest of under surface white ; thighs smoky brown ; metacarpal edge, under wing-coverts, and axillaries white : "iris brown ; beak black ; feet corneous." Length 122 mm., wing 71, tail 50, culmen 7, tarsus 14.5.

"Female : Mt. Scratchley, at 12,200 feet, Oct. 5th, 1896 ; contents of stomach, insects."

9. *PÆCILODRYAS NITIDA*, sp. nov.

Above olive ; upper tail-coverts tinged with yellow and edged with brighter yellow ; head-feathers subsquamate, slightly tinged with orange and obscurely edged with brown ; a large silky-white malar spot continuous with a similar loreal spot, which towards the forehead becomes greenish on the tips ; ear-coverts fuscous washed with yellowish green ; chin grey, tinged with yellow ; sides of throat fuscous, barred with white margins ; rest of lower surface bright yellow ; under wing-coverts lemon-yellow ; wing and tail brown ; primaries edged with grey ; secondaries, primary-coverts, and rectrices with olive : "iris brown ; beak grey, black at point ; feet grey." Length 128 mm., wing 68, tail 67, culmen 8.5, tarsus 11.

"Female : Boirave, July 14th, 1896 ; contents of stomach, insects. Native name 'Totodidiari.'"

10. *PÆCILODRYAS CANICEPS*, sp. nov.

Above, edges of wing-coverts, of remiges, and rectrices olive-green; head above and on the sides dull brownish grey; chin and throat pale grey, varied with darker; upper breast yellowish green; lower breast and abdomen bright yellow, deepening to nearly orange-yellow on the under tail-coverts; wing and tail fuscous brown, under surface of wing rather paler, with ashy edging to the quills; under wing-coverts pale fuscous, tipped with yellow; tail beneath dark brown, strongly washed with olive, the shafts white: bill black; legs and feet horn-brown. Length 160 mm., wing 85, tail 70, tarsus 25.

Description taken from a spirit-specimen.

11. *PÆCILODRYAS LORALIS*, sp. nov.

Above delicate ash-grey, becoming whitish on the rump and upper tail-coverts, brownish black on the head; wing and tail uniform blackish brown; whole body beneath, face, and a large loreal patch nearly covering the forehead white; spot before the eye black; under wing-coverts dark brown: bill, legs, and feet black. Length 155 mm., wing 100, tail 65, culmen 10, tarsus 21.

Description taken from two spirit-specimens.

12. *PÆCILODRYAS SUBCYANEA*, sp. nov.

Evidently the eastern representative of *P. cyanea*, Salvad., from which it differs in the almost entire absence of the white bases of the remiges, one specimen only showing a trace of them, in the feathers of the lower abdomen and the under tail-coverts being tipped with white or buff, except in one other specimen in which the white tips are obsolete, and in the throat being fringed with brown. Of *P. cyanea* Dr. Gadow says (Brit. Mus. Cat. viii. p. 183) that the scales in the front of the tarsus are fused into one long scutum; in the present bird they are distinct. Length 155 mm., wing 94, tail 64, culmen 15, tarsus 27.

Described from four spirit-specimens.

13. *GERYGONE MURINA*, sp. nov.

Above olive-brown, purer brown on the head and upper

tail-coverts, the latter darker; feathers of front, lores, and cheeks mottled with lighter tips and darker centres; ear-coverts brown, slightly rufescent; beneath dingy yellowish white to pale fawn on lower breast and white on middle of abdomen; rectrices olive, with a broad fuscous shading near the tips, which are grey on the mesials, white on the laterals, the outermost tip broad and well defined on the inner web; axillaries, metacarpal edge, and under wing-coverts pale lemon-yellow; wing- and primary-coverts fuscous, edged with olive-brown; inner webs of remiges edged with grey; base of under mandible whitish; under surface of toes yellow: "iris straw-yellow; beak corneous; feet light corneous in male, corneous in female." Length 100 mm., wing 60, tail 39, culmen 8, tarsus 18.

"Male and female: Mt. Scratchley, at 12,200 feet; contents of stomach, insects."

Approximates to *G. magnirostris*, Gld., but has a longer bill, shorter tail, and the upper surface olive.

14. GERYGONE BRUNNEA, sp. nov.

All above brown, slightly tinged with olive; wings fuscous brown, with a broad subterminal fuscous band, the two outermost rectrices tipped with brownish grey; all beneath, under wing-coverts, and inner edges of remiges dingy fulvous white, more nearly pure white on abdomen; cheeks as the under surface, but with fuscous mottling; bill black; legs and feet brown. Length 105 mm., wing 62, tail 40, culmen 7.5, tarsus 18.5.

Described from a spirit-specimen.

Fam. LANIIDÆ.

15. GRALLINA BRUIJNI, Salvad.

Male. Above blue-black; wing-coverts, except the outermost of the greater and all the primary series, white; secondaries and tertials fringed with white, forming with the coverts a continuous white band across the rump; lores, cheeks, and all beneath to abdomen (its sides included) black; a supraorbital stripe behind the eye, the ear-coverts, and sides of neck white; middle of abdomen, thighs, crissals, under tail-coverts, and basal three-fifths of the tail white,

suffused with buff; rump, upper tail-coverts, and basal three-fifths of upper surface of tail white, the coverts strongly, the tail faintly tinged with buff; under wing-coverts black; quills beneath entirely black: "iris brown; beak and feet light blue." Length 182 mm., wing 103, tail 85, culmen 16, tarsus 23.

"Male: Neneba, Mt. Scratchley, at 4000 feet, Nov. 4th, 1896; contents of stomach, insects."

With regard to this *Grallina*, there are two possibilities; either it forms a new species still smaller than *G. bruijni*, Salvad., a supposition favoured by the fact that males of *G. picata* are larger, as a rule, than their females: or, more probably, as it seems to me, it is the true male of *G. bruijni*—more probably because it is more unlikely that the sexes of *G. bruijni* should have identical colouring, while those of *G. picata* have distinguishing characters, than that *G. bruijni* should be larger on Mt. Arfak than on Mt. Scratchley. If, however, Salvadori should be right as to the sex of the example of *G. bruijni* which he considers to be a male, then the present species must be different*.

16. PACHYCEPHALA, sp. inc.

Female. Above brown, slightly washed with rufous on the back and hind neck; ear-coverts, sides of neck, a broad pectoral band, and flanks pale tawny brown; rest of under surface white; indistinct shaft-streaks on throat and breast; under wing-coverts white, whity brown near edge of wing; edges of quills beneath white, with a tawny wash; wing fuscous, primaries edged with grey, rest of quills edged with the colour of the back; a spot before the eye dusky; a superciliary stripe from the lore brownish buff; tail brown: beak black; legs and feet brown. Length 145 mm., wing 77, tail 68, culmen 10, tarsus 20.

Young male and two females: "Boirave, July 11th–24th, 1896. Iris brown; beak black, corneous in male; feet grey, pink in male. Contents of stomach, insects."

* [Mr. De Vis has sent home a skin of this bird for comparison. Dr. Bowdler Sharpe considers it to be undoubtedly referable to *G. bruijni*.—EDD.]

17. *PACHYCEPHALA SORORCULA*, sp. nov. = *Schlegeli* (vide De Vis, *Rept. Bijl.*

Male. Occiput and all above olive-green; head brown, a little ashy; supracaudals with bright yellow tips; cheeks, chin, and upper throat grey, with fuscous centres and ashy-white tips; jugular collar smoky grey, its lateral and hindmost feathers greenish yellow; all the rest beneath yellow; wing-coverts, secondaries, and base of inner primaries edged with yellow, the other primaries with ashy; wing fuscous brown; tail dark brown, tinged with olive-green above and brighter yellowish green below; metacarpal edge and adjacent under wing-coverts yellow; inner edge of remiges within ashy; thigh brown, the hinder lower feathers with yellowish tips: bill black; feet light brown. Length 150 mm., wing 85, tail 68, culmen 10, tarsus 26, gape 18.

Described from a spirit-specimen.

Fam. C E R T H I I D Æ.

18. *DAPHNOSITTA MIRANDA*, gen. et sp. nov.*DAPHNOSITTA*, gen. nov.

Bill subulate, straight, shorter than the head, not notched; nostril basal, exposed, in front of an operculated groove; no rictal bristles; wing more than twice as long as tail, first primary reaching beyond primary-coverts, tip of wing sharp, formed by third, fourth, and fifth primaries, secondaries short; tail short, obtusely granulated: feet crimson; tarsus and hallux (with claw) of equal length, longer than middle toe; claw of hallux as long as its phalanx.

DAPHNOSITTA MIRANDA, sp. nov.

Above and below black, the feathers broadly edged with lead-grey; wing and tail fuscous brown; the four rectrices largely tipped with pink, nearly half the outermost being of that colour; rump stained with crimson; forehead, chin, and some feathers of the orbital ring rich crimson; metacarpal edge and adjacent under wing-coverts white; middle third of primaries and secondaries white on under surface of inner webs, forming a broad band across the wing; lateral rectrices below darker pink than on the upper surface: "iris straw-

yellow ; beak black ; feet yellow." Length 112 mm., wing 83, tail 44, beak 18·5, tarsus 15.

Three females : "Mt. Scratchley at 12,200 feet, Oct. 1st-5th, 1896 ; contents of stomach, insects." One spirit-specimen.

Apart from the shortness and straightness of the bill, this bird is structurally a *Sittella*, and, were it not for its very erratic colouring, its bill would hardly prevent it finding a home in that genus. But on the ground that so wide a departure from the characteristic sobriety in colours of the *Sittellas*, and indeed of the *Creepers* generally, argues physical differences not apparent to the eye, it appears to me advisable to provide a separate genus for the present bird.

Fam. MELIPHAGIDÆ.

19. MELIORNIS SCHISTACEA, sp. nov.

Above brown, slightly washed with ash-grey ; feathers of head and mantle with obscure fuscous shaft-streaks ; below ashy brown ; chin and throat mottled with greyish-white tips ; abdomen obscurely streaked with the same ; tips over vent and under tail-coverts purer white ; lores and cheeks minutely mottled with white tips ; ear-coverts greyish brown ; wings and tail brown, paler below ; two outer rectrices largely tipped with brownish grey ; under wing-coverts brown ; thighs paler brown : bill brown-black ; tarsi and toes horn-blue. Length 155 mm., wing 76, tail 67, culmen (estimated) 14, tarsus 22.

This Honey-eater, described from a spirit-specimen, has all the structural characters of a *Meliornis*, yet I am by no means satisfied that it can be properly placed in that genus. The general habit of the bird and its total want of bright colouring militate much against it ; the bill, however, in this example is so much injured (the upper mandible being half blown away) that I prefer to wait for a more perfect specimen before proposing generic distinction for it.

20. PTILOTIS SIBISIBINA, sp. nov.

Male. Head and neck above brown, washed with olive-

green, neck spotted with ashy tips; back rufous brown, with slightly paler edges; rump rufous brown; upper tail-coverts, wings, and tail fuscous brown, the remiges edged with rufous, the primary-coverts rufous; ear-orifice anteriorly fringed with pale yellowish-buff feathers with fuscous centres; behind the ear a narrow stripe of golden yellow; malar region fuscous in middle, yellowish towards the ears; chin and upper throat ash-grey; rest of lower surface russet-brown, washed with yellow on lower throat, with rather paler tips on sides of breast, and inclining to pale chestnut on sides of abdomen, under tail-coverts, and under surface of tail; middle of abdomen pale ashy grey; under wing-coverts buff stained with chestnut; under surface of wing fuscous brown, the quills broadly edged on inner web with rich rufous: "iris brown; beak black; under the eyes dull yellow; feet grey or light grey." Length 190 mm., wing 97, tail 85, culmen 25, tarsus 23.

Female. Head and neck above grey, with a brown tinge, no grey spots on neck (in another specimen marked ♀ they are present), the auricular fringe and malar region brown; otherwise like the male.

Two males and two females: "Boirave, July 13th-24th, 1896. Contents of stomach in two (♂ ♀) fruits, in the others insects. Native name 'Sibisibina.'"

This species is generally similar to *P. filigera* and *P. xanthotis*, with a distinct caruncular fold under the eye and behind the gape above and below, especially in the male.

21. PTILOTTIS LACRIMANS, sp. nov.

Above fuscous brown, with slight tinge of olive; wing-feathers edged with bright olive-green; the rectrices faintly washed with olive on outer webs; forehead, lores, behind and below the eye posteriorly nearly black, the last crescentiform, conspicuously spotted with white; over the rictus a nude spot, margined above with short yellowish feathers, which merge into a bright yellow stripe over the fuscous ear-coverts, some of which below it are also yellow; behind the ear-coverts a broad triangular tuft of white; chin and throat

fuscous, with a patch of yellow on each side, which may reach almost round the throat; rest of under surface dull olive-grey, the centres of the upper breast-feathers rather darker; abdomen dark ashy grey, with pale tips, forming indistinct bars; under tail-coverts pale fuscous, edged with isabel-grey; metacarpal edgings and under wing-coverts buff stained with pale fuscous: "iris brown; beak black; feet yellow." Length 182 mm., wing 85, tail 87, culmen 16, tarsus 19.

"Two females: Mt. Scratchley, at 12,200, Oct. 5th and Sept. 16th, 1896."

The dark forehead and throat, white-spotted face, grey-spotted abdomen, and sordid under tail-coverts separate this bird from the nearly allied *P. subfrenata*, Salvad.

22. *PTILOTIS OBSCURA*, sp. nov.

Above dull olive, feathers of head and back with fuscous shaft-streaks; wing and tail fuscous, edged with olive-green, the primaries narrowly edged with greyish green; lores fuscous, a supraloral band from forehead isabel; below pale rufous brown, washed with olive-brown and varied with narrow fuscous shaft-streaks on lower throat and breast; chin and upper throat buffy white; under tail-coverts buff; under wing-coverts buffy white; a few post-auricular plumes with whitish tips; sides of throat fuscous: beak black; legs pale brown; toes dark brown. Length 170 mm., wing 82, tail 70, culmen 13, tarsus 23.

From Mt. Scratchley; condition bad, and sex not determined.

23. *ACANTHOCHERA FUSCA*, sp. nov.

Male. Above and below fuscous, feathers of back obscurely, of breast more distinctly edged with grey; chin and upper throat-feathers speckled with brown, the tips of their shafts naked; abdomen smoky brown; upper tail-coverts smoky brown, with rufous-grey edges; naked skin of head confined to a subocular stripe and postocular spot; inner edges of lateral rectrices below grey: "iris brown or light brown;

beak black; under eye light blue, behind eye yellow or orange-yellow; feet grey." Length 240 mm., wing 109, tail 128, culmen 27, tarsus 30.

Four males, three females: "Mt. Scratchley, at 12,200 feet, Sept. 25th-Oct. 6th, 1896; contents of stomach, fruits in two, insects in the others." Three spirit-specimens.

The tail is strongly graduated; there is a caruncular fold in the skin of the lower eyelid, varying in distinctness in different specimens. These birds are in full moult.

24. *NENEBA PRASINA*, gen. et sp. nov.

NENEBA, gen. nov.

Bill strong, subconical, shorter than the rest of the head, as deep as broad at forehead; culmen strong, straight at base, gently curved to tip; gonys convex in middle; nostrils round, naked, at the end of a coriaceous groove; rictal bristles few and feeble; wing moderate, narrow, pointed, tip formed by third, fourth, and fifth primaries, fourth and fifth equal and longest, first half as long as second; tarsus moderate, scute almost entire in front; hind toe strong, as long as middle toe; tail moderate, rounded. Habit slender; colouring plain.

NENEBA PRASINA, sp. nov.

Head, hind neck, ear-coverts, and sides of head brown, washed with olive; back, rump, upper tail-coverts, and edges of remiges and rectrices olive-green, edges of primaries brighter; wings and tail brown; chin and throat pale earth-brown, faintly washed with green and streaked with pale yellow; breast, abdomen, and under tail-coverts sordid greenish grey, with broad, obscure, yellowish, longitudinal edge-streaks on the breast and abdomen; round the eye a ring of differentiated feathers russet-green; under wing-coverts white dappled with grey: "iris light brown; beak brown; feet grey."

Male: "Neneba, Mt. Scratchley, at 4000 feet, Nov. 9th, 1896; contents of stomach, seeds."

25. *ZOSTEROPS CUICUI*, sp. nov.

Male. Above uniform green, wings and tail brown, edged

with green, the lores fuscous grey (fuscous bases and white tips); orbital ring yellow; ear-coverts fuscous green with white shafts; under surface citrine-yellow, paler on throat and under tail-coverts; metacarpal edge and adjacent under wing-coverts yellow; under surface of wing and tail ashy brown; inner web of secondaries narrowly edged with grey: "iris light brown in male, brown in female; beak above black in male, corneous in female, lower mandible yellow; feet yellow." Length 133 mm., wing 78, tail 60, culmen 10, tarsus 12.

Male and female: "Boirave, July 9th and 16th, 1896; contents of stomach, insects. Native name 'Kui Kui.'"

26. *ZOSTEROPS LÆTA*, sp. nov.

Above yellowish green, the head rather duller; rump bright yellow; lores, orbital ring, cheeks, and ear-coverts yellow, the last two greenish; a dusky spot before the eye; body beneath and under wing-coverts yellow, feathers of the throat white at the base; wing-coverts and tail fuscous, edges uniform with the back; tail beneath brown, washed with green; lateral rectrices edged beneath with dull olive-green: bill brownish black; upper part of tarsus yellow, lower and feet pale yellowish brown. Length 115 mm., wing 75, tail 44, culmen 8, tarsus 18.

Described from two spirit-specimens.

Fam. SYLVIIDÆ.

27. *MEGALURUS PUNCTATUS*, sp. nov.

Above rufous brown, a little redder on head and upper tail-coverts; feathers of head and upper tail-coverts with narrow fuscous shaft-streaks, those of head with much broader streaks; tail like back, with broad fuscous shaft-streaks, in which are numerous darker bars; lores grey; a buffy-grey superciliary stripe behind the middle of the eye; ear-coverts brown, with white shaft-streaks: below impure white; lower throat pale brown, with fuscous spots anteriorly, mostly on either side of it; sides of breast, flanks, crissals, and under tail-coverts slightly rufous brown, the terminals of the last with narrow fuscous shaft-streaks; metacarpal edge and

under wing-coverts like flanks, with fuscous centres; wings above fuscous brown, secondaries broadly edged all round with rufous, primaries narrowly with greyish brown; under wing fuliginous grey, internal webs pale sordid rufous: "iris light brown; beak light brown; feet pink." Length 190 mm., wing 61, tail 108, culmen 12.5, tarsus 21.

"Male: Neneba, Mt. Scratchley, Nov. 10th, 1896; contents of stomach, insects."

28. *ACROCEPHALUS CERVINUS*, sp. nov.

Female. Above olive-brown, tinged with russet on rump and upper tail-coverts; below nearly uniform vinaceous fawn-brown, rather darker posteriorly; primary-coverts pale fuscous brown, edges of primaries tinged with yellow; metacarpal edge and under wing-coverts dull buff; no distinct eye-stripe; thighs yellowish brown; inner webs of quills narrowly edged with pale rufous: "iris red; upper mandible corneous, lower pink; feet pink." Length 171 mm., wing 80, tail 76, culmen 14.5, tarsus 22.

Female: "July 24, 1896; contents of stomach, insects and flowers."

29. *DRYMAEDUS BREVIROSTRIS*, sp. nov.

Above coffee-brown, the rump tipped with buffy brown, the head and neck brown, deepening to fuscous on the forehead; chin and upper throat sordid white; rest of under surface ashy, washed with brown, becoming rufous on flanks and vent and chestnut-brown on under tail-coverts; lores and eyelid posteriorly white, separated by a black spot above and below; side of head ashy brown; ear-coverts at base and a patch on the sides of the throat fuscous; apical half of ear-coverts ashy, with white shafts; all the wing-coverts black, and, except on one or two of the primary-coverts, largely white-tipped, forming two bands across the wing; remiges fuscous brown, a trace of a grey spot near base of fourth and fifth primaries; apical half of primaries edged with white, greyer towards tip; secondaries edged with russet-brown; axillaries ashy; under wing-coverts blackish, broadly white-tipped, forming a bar; primaries and second-

aries with a white spot near the base, forming a second and larger bar; tail dark reddish brown, becoming fuscous brown on the laterals, all but the four central quills tipped with white, the outermost broadly: "iris brown; beak black; feet pink." Length 196 mm., wing 77, tail 90, culmen 13, tarsus 37.

"Female: July 9th, 1896; contents of stomach, insects. Native name 'Kuetu.'"

Apart from the differences of colouring, I judge, from the shortness of the bill and the proportions of the tarsus, wing, and tail, that this is not the female of either *D. beccarii*, Salvad., or *D. brevicauda*, mihi, and give it a distinctive name accordingly.

30. *CRATEROSCELIS MONTANA*, sp. nov.

Fledgeling. Upper surface and tail rather bright rufous brown, upper tail-coverts still more rufous; head greenish grey; beneath grey, streaked with whitish tips on chin and throat; upper breast dusky grey, with blackish shaft-stripes; lower flanks and abdomen washed with rufous; under tail-coverts dark rufous; wing fuscous brown, edges of secondaries uniform with back, extreme edges of primaries greyish brown; inner primaries and secondaries beneath edged with rufous; metacarpal edge fawn, streaked with dark shaft-stripes; front and lores blackish; orbital ring and some feathers above and below it buffy white: bill brownish black; feet greyish brown. Length 130 mm., wing 65, tail 30, culmen 20, tarsus 20.

A larger bird than *C. murina*; I am inclined to think that when we know it in its adult condition we shall recognize in it a true *Brachypteryx*, according to Horsfield's definition of that genus. Described from a spirit-specimen.

Fam. PLOCEIDÆ.

31. *MUNIA MONTICOLA*, sp. nov.

Male. Above dusky chestnut, somewhat paler and duller on hind neck and occiput, from this forward gradually darker, on forehead nearly black; rump purer and brighter chestnut; upper tail-coverts and edges of middle rectrices

straw-yellow ; cheeks, chin, and throat black ; breast white, washed with very pale chestnut and scantily flecked with darker ; a black pectoral band ; lower breast and abdomen white, washed with isabel ; flanks white, boldly barred with black ; thighs, crissals, and under tail-coverts black, the hindmost of the latter tipped with straw-colour ; metacarpal edge and under wing-coverts buffy white : "iris brown ; beak blue in adults, corneous blue to grey in young ; feet corneous, corneous blue, or dirty grey." Length 120 mm., wing 62, tail 5·7, culmen 9, tarsus 17.

[The specimen is not quite adult, some brown feathers remaining on the head, and on the thighs and under tail-coverts are traces of buffy brown.]

Female, adult, similar to male.

Female, young. Above brown, growing brighter posteriorly to the upper tail-coverts, which are rufous fawn or pale chestnut ; head slightly mottled with dusky centres ; wing-coverts as back, but with paler edges ; wing fuscous, with rufous edges, the secondaries with pale tips ; metacarpal edge as under wing-coverts, buff ; ear-coverts as head, uniform ; chin and throat nearly black, mottled with white tips ; breast sordid brownish grey, rest of under surface buffy white ; flanks and under tail-coverts pale ruddy buff.

[Distinguished from the young of *M. nigriceps* by the colour of the upper tail-coverts and of the upper breast ; the black pectoral band is the first sign of adolescence to make its appearance.]

This species approaches *M. nigriceps*, but has several marks of distinction.

"Two males, three females : Mt. Scratchley at 12,200 feet, Sept. 16th to 28th, 1896 ; contents of stomach, seeds." Also one spirit-specimen.

32. OREOSPIZA FULIGINOSA, gen. et sp. nov.

OREOSPIZA, gen. nov.

Bill short, triangular, pointed, not toothed or festooned ; profile of culmen and gonys convex ; lower mandible shorter, but nearly as deep as the upper ; wing pointed, fourth, fifth, and sixth primaries longest, secondaries shorter than

primaries ; tail shorter than wing, not, or but slightly, longer than outstretched feet (in spirit-specimen decidedly longer), rounded, middle quills not pointed ; laterals shorter than mesials by about the length of the culmen ; tarsus moderate, middle toe equal to it in length ; colouring dark, relieved with crimson.

OREOSPIZA FULIGINOSA, sp. nov.

Male. Above smoky olive-brown, inclining to smoky grey anteriorly ; upper tail-coverts crimson ; tail fuscous, lustrous, with many narrow blackish bars ; beneath as above, tips of feathers on the sides and lower edge of the throat, edges of most on the upper breast, forming an incoherent pectoral band, most of the flank and the tips of some of the under tail-coverts crimson ; under surface of wing and tail fuscous brown : "iris dull red ; beak coral-red in adults, corneous or brown above and red below in young ; feet corneous."

"One male, one adult and two young females ; Mt. Scratchley, at 12,200 feet ; contents of stomach, seeds. The call of this bird is exactly like that of the domestic Canary."

The female scarcely differs from the male, and the young differ from adults mainly in having the under surface russet or pale coffee-brown and the upper mandible dark horn-brown.

33. *LOBOSPINGUS SIGILLIFER*, gen. et sp. nov.

LOBOSPINGUS, gen. nov.

Beak shorter than head, pointed, nearly as broad as high at nostril, culmen and gonys with nearly equal curves ; edge of upper mandible convex laterally and vertically, becoming suddenly sharp and deflected in front of rictus, but not forming a tooth, angle of lower mandible rounded ; nostril narrow, vertical, exposed ; caruncular lobules behind the rictus ; wing short, first primary short, not reaching tips of primary-coverts, tip formed of the second, third, and fourth, third slightly the longest ; tail short, rounded ; legs and feet stout.

LOBOSPINGUS SIGILLIFER, sp. nov.

Above bright green ; rump, upper tail-coverts, and central tail-feathers brown, the last tinged with green ; wings and

primary-coverts fuscous, the former edged uniformly with black, lesser and mesial coverts green; caruncular lobes consisting of two round, flat, blue discs behind rictus, and a yellow triangular cushion-like lobe behind them; body beneath and side of head dull pale green; under wing-coverts, breast, and abdomen pale brown; under tail-coverts rufous brown; inner edges of remiges pale brown; tail fuscous, with brownish ashy edges: upper mandible fuscous with yellow edge, lower yellow with the base below fuscous; legs and feet pinky grey.

Described from a spirit-specimen.

Fam. PARADISEIDÆ.

34. *PAROTIA HELENÆ*, sp. nov.

This species bears a very close general resemblance to *P. lawesi*, Rams., and might be described in the same terms, were it not differentiated from it by the form and colouring of the crest and the non-elongation of the superciliary plumes; the supranasal part of the crest is erect and very low anteriorly and ascends gently to the forehead, the frontal part is suddenly elongated and forms a compressed rounded lobe; the short anterior portion is bright bronze-brown, the elevated posterior part is dark coffee-brown, with a paler bronze-brown reflection, and the adjacent parts of the head are similar in colour and lustre: "iris in both sexes yellow, pupil light blue; beak black; feet in male corneous or light brown, in female iron-grey; contents of stomach, fruits. Native name 'Kanaro.'"

The females of the two species can be distinguished only by the colour of the thighs, which in *P. lawesi* is rufous, in *P. helenæ* fuscous.

"Four males, one female: Neneba, Mt. Scratchley, at 4000 feet, Nov. 3rd-4th, 1896." Also one spirit-specimen.

35. *ÆLURÆDUS SUBCAUDALIS*, sp. nov.

Above bright green; rectrices rather duller and uniform; outer edges of wing-coverts and secondaries with a bluish shade, the latter with small buff apical spots. Head above,

nuchal collar, and ear-coverts much as in *Æ. stonei*, Sharpe; face white, chin grey mottled with black bases; a black moustachial streak from middle of hinder edge of chin to side of neck; upper throat buffy white, immaculate; beneath fawn, washed with yellowish green on lower throat and breast, and varied with large apical black spots, which form longitudinal streaks anteriorly, but break up into smaller scattered spots on lower breast, and vanish on abdomen and thighs; lower tail-coverts fulvous, with green and fuscous-green tips, more or less lengthened; axillaries and lesser under wing-coverts buffy white, the greater series ashy with white tips: beak pale greenish horn; legs and feet bluish grey. Length 242 mm., wing 125, tail 98, culmen 20, tarsus 34.

Mt. Scratchley, a spirit-specimen.

Fam. ANATIDÆ.

36. *SALVADORINA WAIGIUENSIS*, Rothsch. et Hart.

Male. Head and neck above and below dusky brown, minutely pencilled with paler tips, which are more conspicuous on the sides of the head; a brownish-white crescent on lower eyelid; upper surface black, with a slight gloss of light blue, each feather on the lower back, rump, and upper tail-coverts with two narrow white bars, one terminal, the other mesial and concealed, the bars broader on the scapulars and median wing-coverts; anterior greater coverts broadly edged with white, forming a band across the wing; speculum rich green, with faint purple reflection on upper half, fuscous with purple reflection on lower, broadly edged posteriorly with white, which forms a second band; inner primaries narrowly edged with white; tail fuscous brown, with grey edges above, grey below; lower surface white stained with isabel, which is darker on the upper breast; throat, sides of breast, and whole abdomen and under tail-coverts with fuscous spots, darker and paler mingled; flanks black, conspicuously barred with white edges; wing beneath shining lead-grey; lesser under wing-coverts fuscous, barred with white, tipped with grey, the greater lead-grey; inner

axillaries white, with grey shaft-streaks : "iris brown; beak yellow, upper mandible from base of culmen towards tip light brown; feet yellow, membrane (in female) brown." Length 470 mm., wing 190, tail 130, culmen 35, tarsus 32.

Female like the male, but smaller (length 440 mm.), duller in colouring, with narrower speculum; rectrices narrowly barred with white and with broader edges, and the bars of the lower back and rump undulated.

"Male and female: Mt. Scratchley at 12,200 feet, Sept. 24th, 1896; contents of stomach, stones and dirt."

The egg is of a uniform creamy grey, 55.5×42 mm.

The duckling, as shown by a specimen in spirit, is above brown, wing and rump posteriorly edged with white, tips of tail brownish grey; a broad superciliary band, encroaching in front on the forehead, and sides of head and neck white; a black stripe from the hinder canthus of eye to occiput: bill, legs, and feet blue, nail of bill and nasal region horn-yellow.

[Mr. De Vis had given a new name to this Duck, but it is certainly the same as the curious form of Waigiou lately described and figured in Nov. Zool. (i. p. 683, and ii. p. 22, pl. iii.) as *Salvadorina waigiensis*. We therefore omit Mr. De Vis's name, having received full authority to amend his MS.—EDD.]

XXX.—*Descriptions of some new or little-known Bird's-eggs from Queensland.* By D. LE SOUËF (of Melbourne).

THE following notes relate to the nesting and eggs of various birds which I have either collected myself or of which I have recently received specimens with remarks from my correspondents in Queensland.

1. DACELO CERVINA (Gould). Fawn-breasted Kingfisher.

I noticed this bird on two or three occasions in the open forest country near Cooktown and found two of their nests, each of which contained three eggs; both nests were hollows scooped out in termites' nests in eucalyptus trees, one about thirty feet from the ground and the other fifty. The birds

themselves were shy, and it is astonishing how quickly they hear anyone approaching the tree where they are sitting on their nest, and they frequently fly off before being seen. There is no lining to the nest any more than the dust of the termites' mounds, and the mound is sometimes so small that it seems impossible that the bird could find room to make its nest in it. The following are the measurements of one clutch: A, 1.51×1.28 inch; B, 1.60×1.38 inch; C, 1.50×1.36 inch. The eggs are pure white and slightly lustrous; they were taken on November 18th, 1896.

2. *PODARGUS PHALÆNOIDES*, Gould. Moth-plumaged Podargus.

The nest of this bird was found on November 25th, 1896, and contained two eggs much incubated; on the same day another nest was discovered which contained two young ones covered with white down and about a week old. In both instances the male bird was sitting on the nest, the female being in a neighbouring tree; and in the various nests of this bird that I have found, in every instance so far, when I have secured the sitting bird either on eggs or young, it has on dissection proved to be the male.

They are sleepy-looking birds and do not as a rule leave the nest until almost within one's reach, and then only to fly leisurely to another tree not far off, where they can be easily secured. Occasionally I have noticed the female resting close to the male as he sits on the nest, but as a rule they are on a neighbouring tree and the report of a gun close by does not seem to disturb them much. The present nest was built on the horizontal branch of a eucalyptus about fifteen feet from the ground, being almost flat and composed of twigs without any lining. It was 6 inches in diameter and 2 inches in depth. The eggs are pure white, oval in form, and measure: A, 1.62×1.05 inch; B, 1.63×1.07 inch.

3. *PTILINOPUS MAGNIFICUS* (Temminck). Magnificent Fruit-Pigeon.

The egg of this beautiful Pigeon was found in November at Cairns by Mr. K. Broadbent, of Brisbane, when he was on

a collecting tour in that district. He informs me that one egg is the usual number laid, which agrees with the practice of the allied Fruit-Pigeons. The nest was the usual light, shallow structure, composed of a few twigs loosely laid together and measuring six inches in diameter. It seems a wonder the birds do not lose their eggs when flying off and on such a flimsy structure. The egg is pure white, slightly glossy, and nearly oval in form, though rather pointed at the thinner end; it measures 1.65×1.19 inch.

4. *PTILINOPUS EWINGI*, Gould. Ewing's Fruit-Pigeon.

I described the nest and eggs of this beautiful little Pigeon about two years ago, but then had only a single egg. Having now received several from Mr. H. G. Barnard, I am enabled to give some more particulars. Mr. Barnard found these birds breeding in the mangroves at Cape York, and seldom saw them elsewhere. The nests were placed at any height from four to thirty feet above the water, and were generally found by the bird dashing off, as Mr. Barnard ploughed through the mud up to his knees at every step, harassed by millions of sand-flies. The small fragile nests each contained only one white egg. The following are the measurements of two taken: $1.29 \times .87$ inch and $1.14 \times .83$ inch.

5. *CRASPEDOPHORA ALBERTI* (Elliot). Prince Albert's Rifle-bird. (Fig. 1, p. 395.)

The eggs of this beautiful bird have been found this season at Cape York by Mr. H. G. Barnard, who has been collecting there for Dr. C. Ryan, Dr. Snowball, and myself; and I cannot do better than quote his own notes on the subject, which are exceedingly interesting:—

“I found the first eggs of this bird on October 23rd, 1896, near Somerset, Cape York. On that date two nests were taken each containing two fresh eggs. The first (which I forward for description) was built in a small palm, seven feet from the ground: it was very loosely put together; in fact, if one is not very careful in taking such a nest it would fall to pieces. As a rule the nests were placed in

very conspicuous spots, the birds selecting patches of scrub where the undergrowth is very thin, evidently with the intention of seeing an enemy approach, as I did not in a single instance flush the bird from its nest. These birds are very

Fig. 1.



Nest of *Craspedophora alberti*.

shy and hard to get a shot at. They do not seem particular as to the kind of tree they breed in, as I found them nesting in pandanus-trees and palms, in small trees that had had their tops broken off and a few shoots growing out, also against the stems of small trees where two or three vines met; in one

instance I found the nest on the top of a stump 18 inches from the ground. If a nest was found with one egg and the egg were taken, the bird always laid a second next day, but if the first egg was left it always disappeared."

At the first nest Mr. Barnard found he had to remain in hiding for over an hour before the bird returned, but owing to the weather being so warm there was no fear of the eggs getting cold during that time. The female of the Victoria Rifle-bird sits very closely to her nest, and the trunk of the tree on which she is nesting often has to be struck several times before she will fly off.

The nests and eggs of the three Australian Rifle-birds are now known, as Mr. A. J. Campbell described that of the *Ptilorhis paradisea* taken in the Clarence River district, before the Field Naturalists' Club of Victoria last month; and the egg of the *Ptilorhis victoriæ* was first found by Mr. H. G. Barnard and myself on the Barnard Islands in 1890, and was also described by the same gentleman. It seems strange that the natives of Cape York, where these birds are plentiful, should have told Macgillivray that they laid white eggs in hollows in trees; it is possible that the fact of the birds leaving their nest on the slightest alarm may account for it, but it is more likely still that they mistook the bird.

The nest is very loosely constructed of green twigs with the leaves on, large dead leaves, and vine-tendrils. Its external depth is 5 inches, internal $2\frac{3}{4}$ inches; external diameter 9 inches, internal $4\frac{1}{4}$ inches. The eggs are beautifully marked, and are very similar to those of the other two Rifle-birds. There are two types, one having a much darker ground-colour than the other; both are slightly lustrous.

Type A.—The ground-colour is ochraceous buff, richly marked with stripes starting from the larger end close to the apex, where they coalesce, towards the smaller, and tapering off to a point. The markings are of various lengths and breadths, some being large and going three parts down the egg, and others again being only elongated dots. They vary in colour, but are principally various shades of rich

rufous brown; some lighter ones appear of a greyish-blue hue. They have the appearance of being painted on by hand, one often overlapping the other, and darker markings sometimes appear as if beneath the lighter ones. They measure: A, 1.31×1.04 inch; B, 1.24×1.03 inch.

Type B.—The ground-colour cream-buff, the elongated markings thinner than in the preceding and commencing further from the apex. Many of the markings are greyish blue at their larger end, darkening gradually towards their point to rufous brown. The smaller end of the egg generally has few markings on it, and those mostly small. They measure: A, $1.22 \times .88$ inch; B, $1.28 \times .89$ inch.

Rifle-birds' eggs are without exception the most beautiful and striking of all the Australian birds'-eggs.

6. *ARSES CANDIDIOR*, De Vis. White-breasted Flycatcher. (Fig. 2, p. 398.)

The nest and two eggs of this pretty Frill-necked Flycatcher were found at Somerset, Cape York, by Mr. H. G. Barnard on December 12th, 1896. He states that "it was found in the scrub, built between two thin vines, which hung down from the trees above, and was about thirty feet from the ground. When on the nest the birds seem very tame, almost letting one catch them before flying, though otherwise they are very shy."

Their beautiful open nest has the appearance of a hanging basket, and is fastened between two upright hanging vines by cobwebs. The interior is composed of fine dark-coloured rootlets, and the exterior of small light-coloured twigs, rather loosely put together, and ornamented on the outside with green lichen, the whole being lightly covered with cobweb. It is a very similar structure to that of *Arses kaupi*, which I described last year. It measures—external depth $3\frac{1}{4}$ inches, internal $1\frac{3}{4}$ inch; external diameter $2\frac{1}{2}$ inches, internal $1\frac{1}{2}$ inch. The eggs have a white ground-colour and are freckled all over, especially on the larger end, with small irregular reddish-brown markings, some on the apex appearing as if beneath the surface of the shell and of a pink colour. They measure: A, $.73 \times .52$ inch; B, $.72 \times .53$ inch.

7. *MACH  RIRHYNCHUS FLAVIVENTER*, Gould. Yellow-breasted Flycatcher. (Fig. 3, p. 399.)

Mr. H. G. Barnard also found the nest and two eggs of this interesting Flycatcher on the 14th of December, 1896.

Fig. 2.



Nest of *Arses candidior*.

It is locally called the "Boat-billed Flycatcher," an appropriate name. The nest was built in the fork of a thin projecting branch and was 14 feet from the ground. It is a shallow open structure, the interior being built entirely of

curly vine-tendrils, a springy but uneven surface for the delicate eggs. The exterior is composed of thin twigs, and the nest is fastened on to the branch with cobwebs; a little of the same material is used to help to keep the outer portion of the structure together. The twigs used are of the same kind as the Frill-necked Flycatcher uses for her nest. The

Fig. 3.

Nest of *Machærirhynchus flaviventer*.

external depth is $1\frac{3}{4}$ inch, internal $\frac{1}{2}$ inch; external diameter $3\frac{1}{4}$ inches, internal $1\frac{1}{2}$ inch.

The ground-colour of the eggs is pure white, with a few small rufous-brown markings of irregular shapes, they being much more plentiful at the larger end, where they form an irregular zone. They measure: A, $\cdot69 \times \cdot50$ inch; B, $\cdot68 \times \cdot49$ inch.

XXXI.—*On the Birds of Zululand, founded on the Collections made by Messrs. R. B. and J. D. S. Woodward.*
By R. BOWDLER SHARPE, LL.D., Assistant-Keeper,
Sub-Department of Vertebrata, British Museum. *With
a Narrative of their Travels,* by R. B. and J. D. S.
WOODWARD.

(Plate X.)

THE brothers Woodward, of Hlati Kula, Ubombo, for the last three years have devoted their energies to the exploration of Zululand, and the list of species of the birds of which they have obtained specimens has been prepared from the collections that they have sent to England from time to time. As will be seen from the account of their journeys, the travellers have traversed a large tract of country, and have enlarged our views as to the ranges of several species, while the discovery of a new Barbet, allied to an East-African species, is of great interest, and the occurrence in Zululand of *Turacus livingstonii* and *Nicator gularis*, species hitherto believed to be confined to the Zambesi district, are also facts of importance.

The following narrative, drawn up by the collectors themselves, gives an excellent idea of the nature of the country in Zululand and of the most characteristic features of its bird-life.

*Description of our Journeys in Zululand, with Notes on its
Birds.* By R. B. and J. D. S. WOODWARD.

As we have always taken pleasure in the study of ornithology, both in Africa and America, we think the following short account of our travels in Zululand may interest the readers of 'The Ibis,' and give them some idea of the birds to be met with in that country.

Having provided ourselves with a spring cart large enough to sleep in at night, a pair of horses, and a Kafir boy, also guns, ammunition, &c., we arrived at the Tugela river, which bounds Natal on the north side, and crossed into Zululand on the 14th July, 1894. The Tugela river is wide, and often

impassable, but the Government have provided a flat-bottomed "punt," in which a cart and horses or a waggon and oxen can be easily conveyed across by means of a wire rope suspended from bank to bank. After having passed through so much bush-land along the coasts of Natal, the bare hills on the Zulu side did not look so inviting. Proceeding on our journey we came to the Inyoni flats and encamped near a small stream where there are a few mimosa-thorns. In these we found some pretty Honey-suckers, black with scarlet breasts (*Cinnyris gutturalis*). Here we rested for the Sunday, and next day crossed the river Amatikulu, where the horses had heavy work to draw the cart through the deep sandy drift. There are some white farmers settled near this stream, a few men who secured farms from the chief before the country was annexed by the British Government.

The air has a frosty feel at night now, this being mid-winter. Leaving the main road we called at the residence of chief John Dunn, a nice house enclosed in a plantation of Australian blue gums. Near here we saw a number of fine Paauw (Bustard), which is the largest and best game bird in South Africa; but, strange to say, many of the Boers have a prejudice against the meat and will not eat it. We reached the sea-side at the mouth of the Inlalaas river, where there is a large lagoon, a beautiful sheet of water, where the storekeeper keeps a boat and supplies Eschowe with good fish in the summer. The sandy hills here are covered with thick low bush, in which we secured a number of birds. There are a good many swamps here, which make it unhealthy during the greater part of the year. The marshes are frequented by different sorts of Waterfowl. It was some time before we could make out what caused the peculiar guttural sounds that issued from amongst the reeds; but by careful watching we discovered that it was made by a species of Water-hen (*Limnocorax niger*), and we afterwards shot some specimens of it. A Reed-bird (*Catrisca apicalis*) here warbles cheerfully, as it runs up and down the stalks. The Black-and-White Kingfisher (*Ceryle rudis*) is common;

this bird, unlike the rest of its tribe, has the hawk-like habit of hovering over the water before pouncing down on its prey. The scarlet blossoms of the aloe and the Kafir-boom (*Erythrina*) attracted numbers of the *Nectariniidæ*, one species of which (*Cinnyris verreauxi*) we had not met with before. As it flits about it displays to advantage its scarlet side-tufts, which set off its otherwise sombre plumage. Another little bird that was new to us was the Yellow-and-Black Barbet (*Barbatula bilineata*), also a small Crab-eater (*Haleyon orientalis*), very similar in plumage to the common *Haleyon albiventris*, but with notes altogether different. The chattering Yellow-breasted Bulbul (*Criniger flaviventris*) was also very common here, as was the Black-and-White Barbet (*Smilorhis leucotis*), which seems to confine itself to the coast-lands, as we have not yet met with it up country.

After remaining here for two weeks we returned to the main road, and leaving the flat country, and passing over a number of low hills with good grass for cattle, reached a large store situated at the nearest accessible point to the Ungoye forest, which we were anxious to visit. Mr. Green deals almost entirely in Kafir goods; but all the store-keepers have to keep accommodation for travellers, and we found them most useful in our journeys. We left our cart here and rode on to the forest about four miles off, Kafir bearers carrying our things. It was a rough native path mostly uphill, till we reached a pretty spot on a high grassy terrace surrounded by dense bush which covered the hills and valleys on three sides. In front of this site was an extensive view of the lower country bounded by the Indian Ocean. A quick-flowing mountain stream supplied us with excellent water, and altogether this seemed such an interesting locality for a naturalist that we decided to build a hut here and remain for some little time.

This forest is the largest in Zululand, being 15 miles long and about 5 broad, and covers a large portion of a range of hills which bounds the coast-lands. Beyond the bush are some rocky heights, to which we made an excursion, and climbing to the top could trace the windings of the Umhla-

toosi river, which about two miles from its mouth forms a lake of considerable size. Amongst these rocks are often found the graceful little klipspringer (*Oreotragus saltator*). It has a beautiful thick grey fur and large eyes, and we have seen it very tame in confinement. Rock rabbits (*Hyrax capensis*) are very numerous here; we have kept these animals in boxes, but they don't seem to get very tame. The Cape "jumping hare" (*Pedetes capffer*), the "Itenashi" of the Kafirs, and large troops of baboons, as well as a few leopards, are found here. The latter we often heard roaring during the winter nights when they were in pursuit of their prey.

There was a large roosting-place of the "Hadidah" or Hagedash Ibis (*Geronticus hagedash*), near our encampment, and when we were short of meat we had only to go there after dark and shoot a brace. This bird derives its name from its peculiar cry of "ha-ha-hadadah," with which it makes the woods resound. Its voice can be heard a long distance off, and harmonizes well with the grand scenery amongst which it dwells. They assemble in small flocks along most of the rivers, but used to be more common in Natal than they are now: we have seen as many as fifty birds roosting on one or two trees overhanging the Ifafa river. The flesh of the Hadidah is excellent eating, and it certainly ought to be protected during the breeding-season. One safeguard this bird has is that the natives will not touch its flesh. When taken young this Ibis can be easily tamed: we have had them walking about the place quite content amongst the poultry, but as they grow old they are apt to wander unless confined. We fed them on meal, bread, &c., although in their wild state they appear to live entirely on insects and reptiles. At the breeding-season they separate and go in pairs, making a large nest of sticks, in which they lay from three to five eggs. When plucked this bird is less than a duck in size; but its long neck and wings give it the appearance of a much larger bird.

We did not find a great variety of bush-birds here. The Lourie or Touracou, so common in Natal, is scarce here, as

the Zulus kill them for the sake of their red wing-feathers, which they use for decorating their head-dresses. Flocks of Levaillant's Parrot (*Paeocephalus robustus*) used often to fly screaming overhead, and sometimes alighted on the tall trees, but would not let us approach near enough for a shot. These Parrots, like the rest of their tribe, are gregarious in their habits, and congregate in large numbers in the upper districts of Natal, but we have sometimes seen them in the coast-lands. They sit quietly during the day, but as evening draws on they fly out in search of food, making the woods resound with their shrill cries. These birds can be taught to talk well. A farmer having kept a pair of these Parrots for some time confined in a cage, gave them their liberty, on which, instead of leaving, they took possession of an old pigeon-house, where they laid their eggs and reared their young: they remained for two seasons, and used to fly in at the sitting-room window to be fed. The young birds as soon as they were fledged left for the woods.

Here we were fortunate enough to discover a new Barbet, to which Capt. Shelley has affixed our name*. We heard its peculiar cry of "chop-chop" some time before we were able to find out what bird made it, as it keeps in the thicker parts of the woods and feeds on berries. The notes of all the Barbets are peculiar: the little Red-crowned Barbet (*Barbatula pusilla*) which is found here breaks the stillness of the woods during the hot hours of mid-day with its monotonous and incessant note, from the metallic sound of which it is well-named the "Little Tinker." This bird, though so common, is not often seen because of its shyness, and perhaps also because it possesses ventriloquous powers. Sometimes the sound seems to come from a bush quite near, and yet no bird is visible, and at other times it is hard to tell from what quarter the sound proceeds.

We took a long ride one day down to the low country and were caught in very heavy rain and had to sleep out; and not having a tent with us, we spent, as may be supposed, a disagreeable night. Having shot a Kingfisher (*Halcyon*

* *Stactolema woodwardi*, of which a figure is given, Plate X.



J.G. Keulemans lith

STACTOLÆMA WOODWARDI

Stactolæma woodwardi

orientalis) which was new to us, we were glad to hasten back to our encampment early next morning.

Besides our new Barbet and the "Tinker," was found here the Red-fronted Barbet (*Pogonorrhynchus torquatus*), a handsome bird, which is very familiar in the bush-country. It is bold and fearless and may often be seen seeking for insects in the gardens round the farmhouses. Like the Woodpeckers, it makes round holes in the trunks of dry trees, where we have found its white eggs, three or four in number. It ought to make a nice cage-bird with its gay plumage, as it is not particular in its diet and feeds on fruits and berries as well as on insects. Amongst the commonest of the birds here were Starlings: the prettiest we have met anywhere is the Green Starling (*Lamprocolius phænicopterus*). The glossy plumage of this bird, which glistens resplendently in the rays of the sun, and its bright orange eyes, together with its lively and cheerful habits, makes it one of the most striking of South-African birds. We kept one of them that we reared from the nest for a long time. It was quite happy in confinement, and would even come down from its perch and alight on the hand in a playful manner. It was a good songster with quite a variety of notes, and would sometimes even enliven the night with a cheerful air. It ate almost anything, but was particularly fond of white ants, which it knocked out of the clay with a sharp blow of its bill. These Starlings fly about in large flocks during the winter season when the berries are ripe, and perching on the branches of a tall tree keep up a lively chorus. The eggs, which are bluish in colour, are laid in the hole of a tree well lined with feathers. We have noticed a peculiarity in the eyes of these birds: when young they are blue like most fledglings, but soon change to a milky white, and remain this colour for nearly a year, when they change again to the bright orange of the adult bird. Smaller than this bird and more distinctly blue in colour is the *Lamprocolius melanogaster*. Its habits are much the same, but it confines itself more to the bush and does not go about in such large flocks. It is a fair songster, and its notes are loud and musical. The

Red-winged Starling (*Amydrus morio*) is a large bird, strong on the wing, and generally flies high; it frequents the neighbourhood of rocks and kranzes, in the holes of which it builds. These Starlings are very sociable and even during the breeding-season do not separate, but lay their blue speckled eggs in convenient crevices of the same cliff. They are very noisy, and, although unable to sing, keep up a constant chattering when they alight. We have taken the young birds from the nest and were surprised to notice how different their plumage was from that of the old birds, being speckled like that of the English Starling. They seem to be very fond of the rock-plum, which grows plentifully near their nesting-places.

Owls are common here, as in most of the thick bushes. Although most people seem to have a sort of superstitious dislike to the cry of the owl, its loud hooting as it breaks the silence of the night is often listened to with pleasure. Out here there are no old ruins with ivy-clad walls, the favourite haunts of these birds in the old country, but decayed old trees in the deep recesses of the forest are often inhabited by a pair, who there deposit their round, white, rough-shelled eggs (which are everywhere the same, only varying in size), and rear undisturbed their venerable-looking offspring. We have kept the handsome *Bubo capensis* tame, reared from a nestling; when fully grown it hoots as loud as its wild relations. *Bubo maculosus* is also a fine bird and its soft "hoo-hoo" breaks the stillness of the moonlight nights. We obtained its eggs, which are four in number, taken out of a hole in a bank. A friend of ours told us that these Owls made considerable havoc amongst his pigeons, entering the dove-cot at night and extracting the birds. We hardly believed this, but one night a tame owl of ours escaped from its cage, and entering a barn tore off the heads of two of our doves! This, however, is quite an exception to the general rule, and owls should be classed amongst the most useful of vermin-destroyers.

Another common species is the Swamp Owl (*Asio capensis*). This is exclusively a grass bird and keeps to the open veldt.

We have met with it in considerable flocks in spots where the grass grows rank ; when disturbed they rise with a harsh screeching, and alight some yards further off. Their long legs enable them to capture their prey amongst the reeds and tall grass which they frequent. *Strix flammea*, the common White Owl of South Africa, has a peculiar "hoot" of its own, very different from the screech of the home species.

The *Trogon narina* is abundant in the Ungoye, and its gaudy plumage reminded us of tropical America, where so many Trogons are found. The favourite haunt of the Trogon is the darkest parts of the forest, where it safely flits from bough to bough. In the nesting-season it keeps up almost incessantly a loud, monotonous, and mournful note during the mid-day hours. Often when one is walking quietly in the bush, this bird will alight on a branch close by, where, sitting motionless, it displays its gorgeous plumage, until, catching sight of you, it disappears like a flash amidst the thick foliage. We have more than once come across their nests : they lay three or four white eggs, about the size and appearance of a pigeon's, in the hole of a tree. The young birds when they first get their feathers are strange mottled little things, not at all pretty ; they are very delicate, and it seems almost impossible to raise them from the nest. We have often seen these birds catching butterflies on the wing like Flycatchers, and have found beetles and caterpillars in their stomachs. The feathers adhere loosely to the skin, and it requires great care to make a good specimen for the cabinet.

Having heard that there was little chance of our being able to keep horses long in the low country on account of the horse-sickness so prevalent there, we cut a good hardwood desselboom, or pole, to take the place of the shafts and bought four large oxen for our cart. Having secured a driver and forelooper (leader), we left the Ungoye and trekked back along the main road until we came to the point where it is joined by the road which leads up country to Eschowe.

To shorten our journey we took a by-road, but found it

very rough, and when we were going down a steep descent to cross a small stream one of the wheels ran into a deep hole, which caused the cart to capsize. Fortunately there were some men near who gave us their assistance, and after off-loading we managed to right it, but the tent-frame was broken in two places. Proceeding on our way and gradually ascending to higher country, we passed through a beautifully green veldt studded with flowers of every hue. As the road neared the bushy kloofs, we heard the cheerful notes of *Laniarius quadricolor*. This, a beautiful Shrike, is of four colours, and its scarlet throat makes it very conspicuous in the thickets. It does not sing, but its cheerful cry of "kong-kong-koit" is one of the pleasantest of the spring sounds. The female is similar in plumage to the male, but the scarlet and black bands are not so well-defined.

Eschowe is situated on high land commanding an extensive view of the surrounding country. Thick woods clothe the valleys about it, making it a pretty site. It is healthy but sometimes very cold, being 2700 feet above sea-level. It is a good place for butterflies, and we caught some during the short time we were there. After leaving Eschowe we crossed the Inlalaas, which is quite a small stream up here; on its banks there is a water-mill for grinding corn for the supply of the town. After travelling a few miles further on we came to a point from which we had a grand view of the Umhlatoosi valley about 1000 feet below, the large flats on either bank being thickly covered with mimosa thorn trees. The windings of the river could be traced for many miles down, and on the far side rose steep hills and rocky precipices intersected by many a wooded kloof. On one of the high points in the distance could be discerned some of the buildings of St. Paul's Church of England Mission, and here and there the hill-sides were dotted with clusters of native kraals with their bee-hive-shaped huts. We found good camping-ground under a huge *Euphorbia*.

This spot, which is on the highlands over the valley of the Umhlatoosi, is about 12 miles from Eschowe. We chose it

as being a convenient centre from which to prosecute our search for birds. It was within easy walking distance of the low flats, where there is plenty of cover for birds amongst the thorns and in the bushy kloofs. Our rule was to rise and get tea at 5 o'clock, and make an early start for the valley with guns and nets, employing the hotter parts of the day in preserving what we had collected. This being the month of October, the spring of the year, we heard a great variety of bird-notes. Here we first met the elegant Long-tailed Turtle-Dove (*Æna capensis*). These lovely little birds are generally seen in pairs about Kafir kraals, searching for grains of corn, or picking up grass-seeds on the road-sides. The Collared Turtle-Doves (*Turtur vinaceus* and *T. semitorquatus*) are the commonest members of the Pigeon tribe found in this country. They are seen everywhere where there is any cover for them, and the loud and cheerful cooing of the larger species, *T. vinaceus*, is liked by everyone. They devour a considerable quantity of grain during the planting-season, but there would not be so much loss if care was taken to plant the seed deeper.

Bee-eaters are very common here: they are especially partial to hot sheltered valleys. We obtained specimens of two species, *Merops bullockoides* and *Merops pusillus*. These birds take their prey, consisting of bees, wasps, gnats, and other insects, on the wing, like the Flycatchers. The skin is thick, like that of the Honey-guide, no doubt to protect them from stings. Several of the trees were covered with blossoms which attracted a number of Honey-suckers. The splendid Long-tailed Honey-sucker (*Nectarinia famosa*), with its golden-green plumage, frequents the localities where sugar-bushes (*Protea mellifera*) grow, in the large flowers of which they find their favourite food. They make a whistling cry as they chase one another from bush to bush, and the male has a short song. The Red-breasted Honey-sucker is one of our most familiar sun-birds and a frequent visitor to the flower-beds, where it extracts nectar from the blossoms as it flits in the sunshine and displays the gay colours of its plumage. It has a cheerful little song. The Black Honey-

sucker (*Nectarinia amethystina*) is very partial to the mistletoes and other flowering parasites that grow on the mimosa-trees. It is of a very pugnacious disposition. We have found several of their nests hanging from low trees; these are domed and loosely put together, composed of grass, dead leaves, and cobweb: the eggs are yellowish white.

A very handsome Honey-sucker is the *Cinnyris gutturalis*, its bright scarlet chest set off by its dark general colour. It is abundant here amongst the aloe-blossoms.

Three glossy Cuckoos are found here, and their spring call-notes are easily distinguishable from one another. The Emerald Cuckoo (*Chalcites smaragdineus*) is considered the most lovely of all the Cuckoo tribe. During the months of October and November its well-known pleasing call sounds from all the kloofs and bushes. The female is not so often met with as the male, but we obtained an egg, which is white. The Golden Cuckoo (*Chalcites auratus*) prefers the thorn-trees, and we heard its soft *di-di-didric* continually. The large Red-chested Cuckoo (*Cuculus solitarius*), from its markings, might be mistaken at first sight for a Hawk. Its loud call-note, which, in the spring-time, resounds through the woodlands, resembles the words "whip-whip-whip," and it never seems to get tired of repeating it. The Black Cuckoo (*Cuculus clamosus*) utters its loud monotonous cry when perched on the top of some tall tree in the heart of the kloofs. When two birds meet they greet each other with a peculiar chattering not unlike that of the Red-billed Hoopoe.

In the "mealie-gardens" here were flocks of Kafir Finches (*Vidua ardens*), two or three males accompanied by a number of brown females. We found a nest in a clump of tall grass, fastened to the stalks; it was a small domed structure, composed of fine grass, and contained little white speckled eggs. The larger Kafir Finch (*Chera progné*), called by the Kafirs "Isakabula," we met with on the highlands. Its enormous tail is rather cumbersome and causes it often to fall a victim to the sticks of the boys, who are fond of decorating themselves with its feathers. The very elegant Whydah Finch (*Vidua verreauxi*) we saw here

for the first time; its tail is curiously arched and looks well as it floats from tree to tree. It feeds largely on grass-seeds. The little Waxbills were numerous here; they are called "Roibeks," from the pretty red bills that most of them have. The King of the Red-bills (*Vidua principalis*) during the breeding-season has a long tail which makes him very conspicuous as he flies with an undulating motion over the flats or sits perched by himself on the topmost twig of a low tree whistling his few notes. We found the nest and eggs of *Estrelda incana*; it was built in a small tree in the open land, and was very loosely made of grass, lined with fowls' feathers. It contained six very small white eggs.

The Cape Canary (*Serinus canicollis*) was common here; it is well known throughout the country for its sprightly habits and cheerful song. It makes a nice cage-bird, and even breeds with the imported canary, producing a pretty mule. The "Mealie-bird" (*Crithagra ictera*) abounds everywhere where there are Kafir mealie-gardens, *i. e.* patches of Indian corn, and when the grain begins to ripen it has to be carefully tended by the children to protect it from the depredations of this and other small birds. Its nest is cup-shaped and placed in the fork of a low tree; and the eggs are white, slightly blotched with brown, and tapering at one end. There were a few Wrynecks (*Iynx pectoralis*) in the open park-like country on these highlands. This bird flies from tree to tree, making a harsh chattering cry, which has sometimes been mistaken for that of a Hawk. It has a peculiar habit of cocking up its tail as it creeps up the trunks of the trees; this is necessary to protect it from being injured by contact with the rough bark, as, unlike that of the Woodpecker, the tail is composed of ordinary soft feathers. Its plumage reminds one of the Nightjar; it has red-brown eyes.

The Yellow-breasted Lark (*Macronyx striolatus*) is common everywhere. It is naturally very tame: boys knock over numbers of them with their sticks, and grass-fires are apt to destroy their nests. The Orange-throated Ma-

cronyx capensis is the finest of our Larks, and, although it cannot sing, it has a pleasant cry, which it utters as it stands on the top of a white-ant heap, or takes its short flight from one low bush or ants' nest to another.

There are plenty of Crows about here. The Ring-neck Crow (*Corvus albicollis*), the Carrion-Crow of South Africa, is constantly met with on the roads, where it frequents the vicinity of the outspans in the hope of picking up a meal. It is also the constant companion of the Vulture, and helps in demolishing the carcass of a dead ox or horse. It seems to have a special partiality for eggs, which sometimes causes it to come to an untimely end by the farmer's gun. It is remarkable how easily these birds can carry off such a slippery object as a hen's egg without cracking it—they sometimes carry one more than a mile before they alight. However, they do more good than harm, and well pay for their occasional depredations. One year our farm was visited by myriads of green caterpillars, which consumed the young grass as soon as it sprouted, and for a time made the hill-sides quite bare of pasture, and it would have been a bad look-out for the cattle had not a large flock of these Crows appeared upon the scene and remained until they had cleared the ground of this pest. They do not seem to resort to vegetable food often in their wild state, and do no harm, so far as we know, to the crops. The young are easily reared, and we have had them walking about the place quite tame. One which we kept for a long time used to roost with the fowls, to some of which it seemed quite friendly, but it occasionally had furious battles with the cocks, which always ended with the discomfiture of the fowl. These Crows, unlike the black species, build in the kranses, and lay two or three large eggs, green, spotted and speckled with brown.

The Cornland Crow (*Corvus capensis*) takes the place of the Rook in England, but is a larger bird. It is gregarious, and when large flocks alight in a field of corn they do considerable damage, but, on the other hand, they destroy numbers of grubs, locusts, and other insects. The young birds are not easy to rear; they get a disease or weakness of

the legs, and soon die. This Crow has a variety of notes, and is often seen perched upon a dead branch croaking to itself: it is said to be capable of being taught to talk. It separates into pairs during the breeding-season, and makes a large nest of sticks in a water-boom or other tree, which it uses year after year.

One of the most beautiful of South-African birds that we had not hitherto come across was the "Glossy Thrush" (*Pholidauges verreauxi*). It is one of the Glossy Starlings, and flies high, going about in small flocks. Its lovely violet colour, with snow-white belly, makes it very striking. The female is very different in plumage, being a brown-spotted bird. The iris is yellow.

After a sojourn of three months near the valley of the Umhlatoosi we left: returning to Eschowe we spent a few days butterfly-collecting and visiting, and then, having taken in a new stock of provisions in our cart, and having had the latter repaired and the axle lengthened, we started for the Umfolosi. The road crosses the Umhlatoosi at a point higher up than that where we had been previously; the valley here was very dry, and grass for the oxen was rather scarce. The drift is good, a weir having been made across, and near by is a roadside house for travellers. We rested here for Sunday: this was an exceedingly hot day—the hottest we have had this summer (Jan. 27), and was followed by a hot night; but we have reason to be thankful that these latter do not occur often, as they are so enervating. On the far side of the river the country rises very abruptly, and we had to ascend by a long and steep pull, almost too much for the oxen. Arrived at the top, we outspanned near a Swedish Mission Station. We were now amongst high grassy hills bare and bleak, and if it had not been for the hospitality of Mr. Fristed, we should have been badly off in such an exposed situation, as a thick, cold, misty rain came on, making the roads slippery and impassable for a day or two. Elevated though this country is, horses do not thrive here on account of the rankness of the grass. Our next halting-place was Melmoth, a small village situated in the open

veldt, where we obtained from the Resident Magistrate a permit to shoot in his district.

Leaving these high lands, we gradually descended into the low thorn veldt, and arrived in the evening at a very dry spot, where we outspanned amidst the aloes and euphorbias, and had to send a long way for water. Next day we inspanned at 6 o'clock, and went down to the valley of the White Umfolosi, and rested for lunch under one of the large trees that grow on its banks. This being a hot day, we enjoyed a bath in this fine river. In the evening we crossed over by the broad sandy drift by taking off part of the load and sending the cart back for it. In this district we found a number of birds that we had not seen elsewhere. This spot is in the midst of a wide stretch of thorn country, through which the White Umfolosi and its numerous tributaries flow. The stream below us is called the "Siza," and a little further off is the Tegwen, the junction of which was a favourite resort of Guinea-fowl. The trees are mostly mimosa or acacia, some of which have fine spreading branches, and look not unlike the cedar of Lebanon. These trees grow either singly or form thick clumps, amongst which are many beautiful park-like glades much frequented by Rollers, Hornbills, and Grey Louries.

The Roller (*Coracias caudata*) is a splendid bird. It ornaments with its brilliant plumage the open pastures dotted with trees, amongst which it flies with its peculiar rolling gait. It is not very common, and is so shy that we have had some difficulty in procuring specimens. It has a harsh grating cry, which it utters when disturbed. Its food is insects, which it hunts in the air or on the ground, and is said to toss up and catch before swallowing.

We shot here a specimen of the Milky Eagle-Owl (*Bubo lacteus*), which is the largest of our Owls: it measures 2 feet in length, and has a stretch of wing of 4 feet 6 inches. It has black eyes. We found the remains of a Dove in its crop. What a contrast this giant Owl is to the *Carine perlata* which we obtained in the same place! This little Owl, which measures only 7 inches, does not hoot or screech,

but has a peculiar whistle, which it utters in the evening and early morning. It seems to confine itself to the mimosa-thorns, lives on insects, and does not much object to the sunshine.

The Umfolosi seems to be the southern limit of the small green Parrot (*Pæocephalus fuscicapillus*). Kingfishers and Crab-eaters were plentiful: here also we often heard the pleasant shrill whirring notes of *Halcyon cyanoleuca*, and admired its lovely blue plumage. The pretty little Natal Crab-eater (*Ispidina natalensis*) was plentiful. A native brought us one of these birds which he had caught on its nest made in the side of an antbear's hole. It was a male bird in perfect plumage, and probably both sexes take part in the work of nidification. The female Kingfisher, unlike other birds, remains fat during the period of incubation. *Halcyon fuscicapilla* is common everywhere. It is very fond of crabs. We once kept a pair of these birds for several months in a large cage, and they throve well on finely-cut meat. They are quite hardy, and easy to keep if supplied with plenty of water for bathing. The egg is perfectly round, an inch in diameter, and looks as if it had been cut out of smooth white marble. We found its hole in the bank of the river; it was well lined with bones and remains of insects. It is amusing to watch these birds as they sit on a branch, nodding their heads whilst they give utterance to their few loud shrill notes. The Blue Kingfisher (*Alcedo semitorquata*) flies rapidly up and down most of the rivers within a foot or two of the water. It lives entirely on fishes, and never quits the bed of the stream. We have watched with pleasure the old birds catching fishes for their young ones, which were perched upon a rock screaming lustily for food.

The Great Kingfisher (*Ceryle maxima*) is the largest of its tribe, being 15 inches in length. It reminded us of the Belted Kingfisher of America (*C. alcyon*), which it much resembles. It is by far the most noisy of all the Kingfishers, and, when flying, keeps up an incessant loud chattering scream. With its large strong bill it swallows fishes of a considerable size. The "Hammer Kop" (*Scopus umbretta*)

hunts along most of the river-courses, where it feeds upon the frogs, reptiles, and insects that it finds there. It is a strange solitary bird, nearly allied to the Herons. The nest is a huge domed structure made of sticks.

Towards the end of February, having got all we could here, we inspanned our oxen and started for the Umbe-gamusa, a tributary of the Black Umfolosi, which we were told was a good place for birds. The road was stony and in some spots in very bad order, and some of the spokes of the cart-wheels came to pieces. After a journey up and down some steep hills of about 20 miles we reached the river, and, crossing, camped on the opposite bank. This was a beautiful district, the flats and hill-slopes covered with large thorn-trees and tall rank grass; but it has the reputation of being unhealthy. We spent some weeks here and at the Black Umfolosi, and got a few birds and insects, but could not obtain the number and variety in this district that we did at the Umhlatoosi and on the White Umfolosi.

Oxpeckers (*Buphaga*) were numerous here and were a great nuisance to one of the beasts who had a bad sore. Though we shot many, others came, and alighting on the back of the ox, and pecking with their peculiar blunt-pointed bills, prevented the sore from healing. These birds, though they do occasional mischief, destroy multitudes of ticks which creep up upon the cattle from the grass and keep them in bad condition by sucking their blood. In this work they are most indefatigable, and are hardly ever seen away from the cattle except when they fly from one herd to another. The cow seems to recognize the Oxpecker as her friend, rather encouraging its attentions than otherwise. When disturbed the bird sets up a harsh screaming and flies away high overhead.

Guinea-fowl are abundant here, but are more often heard than seen, as they keep to the long grass, which makes stalking them very difficult. The Bush-Partridge (*Franco-linus natalensis*) is common in the woods and thickets, and its pleasant evening call-note is heard continually. It seems to favour most the neighbourhood of kraals and homesteads,

as Dr. Livingstone noted when he said that "the screaming of the Francolin proclaims man to be near." Though it is a wary bird, it may be shot by remaining secreted near its haunts in the evening when it comes out to feed. When it comes near it makes a curious low cry, which is misleading, as it sounds as if it proceeded from a distance, and if the watcher then betrays his presence he loses his chance of bagging his game. This bird is called "Tuquali" by the Kafirs, and it consumes a considerable quantity of their grain.

The common Partridge that frequents the open grass-land is *Francolinus subtorquatus*. It becomes very tame in the winter season, even coming into the verandah of the house and picking up crumbs. We have obtained their eggs, which are pure white, laid in the long grass. This Partridge measures 10 inches, being 3 inches shorter than the preceding species.

Leaving this place, we crossed the Black Umfolosi at its drift, which is low at this season, but swift and treacherous after rains. After rest and coffee on its far banks, we journeyed on through a country covered with small trees to a store on the Ivuna, and early next day ascended to the high lands of the Nongoma district. Here we saw several Koran (*Otis afra*), but they seemed wary and kept at a distance. The shadows beginning to fall, we outspanned and spent the night on this open veldt. Our way continued over bare country, until, descending to a lower level, we soon came to a halt at the Church of England Station, superintended by the veteran missionary Mr. Robertson. Beyond this there was no regular road, and it was difficult to keep to the track; but our driver, saying that he was acquainted with the country, took us down a very steep hill, where we had considerable difficulty in preventing the cart from capsizing. After proceeding for some distance along a winding valley over broken and rough ground, the man confessed that he had lost his way, and we had to make our way back as best we could, climbing an almost perpendicular hill. If the little oxen had not been sure-footed and the chain strong, the cart and its contents would have been dashed to pieces

below. Thankful we were when we got into the proper track again and sighted the grand mountain Edukumbaan, near which we proposed to encamp. Next morning we found ourselves on the top of a ridge on the lee-side of a wood, where we obtained beautiful views of the deep valleys, many of them thickly clothed with timber. This district is called the "Hlwati," and is within the Hlabisa magistracy. Although we stopped here for some time we saw very few birds; but the abundance of flowers attracted a large number of butterflies, of which we obtained a nice collection.

As the season was now well advanced and sufficiently healthy, we decided to go down into the low country, and consulted with a neighbouring storekeeper as to the best way of getting down. He told us that we should save a great round if we came past his store, situated on Makawe Hill, about seven miles off, and that as the road was bad he would lend us his oxen to help us. Accordingly we started, going up and down hill in some places with such steep sidlings that we had to support the vehicle with rheims. Makawe Hill commands an extensive view of St. Lucia Lake and the surrounding country. We stayed here a few days, but were troubled most of the time by disagreeably cold north winds, from which there was little or no shelter to be had.

At last the first week in June we descended to the flats and outspanned under a spreading mimosa-tree. We saw large flocks of Guinea-fowl, and shot a few, but without a pointer they are hard to get. The eggs are sometimes taken and hatched under a hen: we saw some well-grown birds at a kraal raised in this way. "Paauw" are common here on the open grass, as we have seen as many as 18 in a day. The Great Bustard, or "Paauw" (*Otis kori*), can run with great speed, making use of its wings, like the Ostrich, but, unlike the latter, can also fly well. Although the Paauw has been often tamed, we have never heard of its breeding in confinement; but as it becomes so tame there does not seem any reason why it should not, and it would then be a valuable addition to the poultry-yard. When living on the south coast we reared one of these birds and

kept it tame for some time ; but when about half-grown it was unfortunately killed by some Carrion-Crows, who tore it to pieces. Although the flesh of this Bustard is good eating, many of the Boers in the Transvaal have a prejudice against it and will not touch it.

The "Koran" or "Knorhaan" (*Otis afra*) is not so gregarious as the Paauw, and is generally met with in pairs. We once obtained two unfledged young ones and reared them on minced meat and meal. One of them thrived well, but having a propensity for swallowing anything which came in its way, ultimately died from eating a piece of glass. The Secretary-bird (*Serpentarius secretarius*) seems to be very widely distributed. It can run with great swiftness, and it requires careful stalking to come up with it, as this bird is always on the alert, and, without using its wings, soon leaves the pursuer far behind. It has a very intelligent way of attacking snakes : it spreads out one of its wings as a shield whilst it seizes the prey in its beak, shaking it from side to side until it is stunned before attempting to swallow it. One that we shot here was 3 feet 3 inches in length, and had an expanse of wing of 6 feet. To judge by the contents of the stomach, it must be a very useful bird ; we found in it the remains of four snakes, several lizards, two rats, and a number of locusts. We have seen this bird in a state of domestication and so tame that, though allowed complete freedom, it would not leave the place, nor did it molest the poultry.

On the 27th of June we started on the backward-track, deciding to take the coast-route, and accordingly proceeded ten miles towards the Inpokenyoni district and outspanned on the veldt. Here we shot a "Dikkop" (*Ædicnemus capensis*), a large Plover and good eating. It has beautiful large yellow eyes. We went on through hilly country covered with scattered thorns, and crossed the Iluliluwe river at the high drift. This part of the country is very dry, and we had to trek for 15 miles after wading the stream before we could obtain water ; fever is prevalent in the summer. Here we collected a good deal of wild cotton, which is useful for stuffing birds. It is a creeping-plant and completely covers

some of the trees, giving them a snowy crown that is visible a long way off. We continued our journey over low hills and through ugly country till we came to the junction of the Hlabisa public road, near which are the St. Lucia coal-fields. A pretty deep shaft has been sunk and some good coal brought to the surface. No doubt this discovery will prove of great value when the projected railway through Zululand is made. At last, after proceeding some miles further, we reached the banks of the great river Umfolosi, where we found a good place to rest under a huge fig-tree. This drift is considerably below the junction of the Black and White divisions of this stream. At this time we had some difficulty in getting boys to work: the Zulu Kafirs are too well off and their wants too few for them readily to take to labour, and the offer of high wages often fails to tempt them. A transport waggon passing afforded us the help we needed, and crossing the river we were soon outspanned near Mr. Rodseth's Norwegian station. At his recommendation we decided to visit the locality called Umbonambi, near the sea. On July the 22nd we left these bare grassy hills, and gradually descended to the coast-flats by a track not very well defined. On the way we passed the Umango, a small wood of tall trees, mostly yellow-wood (*Podocarpus thunbergia*), and rested here awhile. Not finding many birds we continued on our way seawards and soon reached the line of sandy bush-covered hills that here skirt the shore. This turned out to be a very pretty part of the coast—steep sandy hills and deep valleys, dark with thick bush, extending for some miles, with the mouth of the Umfolosi in the distance. The “Hadadah” is common here, and by careful stalking we managed to secure several. The beautiful Yellow-billed Cuckoo, with its extraordinary cry, inhabits the thick scrub; Black-and-White Barbets (*Smilorhis leucotis*) perched on the higher branches of the taller trees, and there were plenty of fat green Pigeons, as well as Trogons and Klaas's Cuckoos. The natives grow a small species of German millet here, which is very hardy, but the grain is poor and husky. We shot a fine White Heron (*Herodias alba*), 3 feet long, and saw several of the Sacred Ibis. After remaining here a short

time we returned to the Umango and outspanned under the yellow-woods.

Trekking on and resting at mid-day on the banks of the Umsineni river near a fine pyramid-shaped mountain called "Umpomvu," that is conspicuous for many miles, we soon reached Mr. Maxwell's Magistracy, ten miles north of the Umhlatoosi river. This residency is situated amongst low hills, and is about 20 miles from F. Green's Ungoye store. After spending a pleasant Sunday here, we proceeded on our way and crossed the Umhlatoosi, where there is a small store and a number of fan-palms. A journey of 12 miles up and down hill, rather tiring for the oxen, brought us to Green's. Here we got bananas and vegetables and other acceptable provisions. This spot is 35 miles from the Tugela and 4 or 5 from the forest. Deciding to pay another visit to the Ungoye, we left the cart and oxen, and engaging bearers took our things to a good place in the woods and put up a tent, first taking the precaution to light a big fire to dry the ground. There is generally a good deal of wind in these elevated forests, and we found it useful to enclose our camp with a wattled fence. Though this was not the best season, we got a few birds, including some more specimens of our new Barbet, and admired the gambols of the pretty Ungoye squirrel. This seems a favourite resort of the large Black-and-White Hornbill (*Buceros buccinator*); in no part of Zululand have we seen so many. It is a wild, shy bird, and keeps to the tops of the trees, flying with great strength and speed. Its cry is loud and harsh, something like the mewing of a cat, and has a very complaining tone. In 1893 we reared one from the nest, and it became remarkably tame. It would follow us when we took long walks and alight on our shoulders to rest, and when we went out riding would accompany the horse for miles, flying round in circles, and perch in the trees along the road. The unwieldy-looking double bill of these birds does not seem to incommode them, as, although strong, it is composed of light porous tissue. The Red-billed Hornbill (*Toccus melanoleucus*) is common here, as it is in most places. It is naturally half tame, and will allow one to approach within a yard or two without

stirring; on being disturbed it floats rather than flies to another tree, uttering its loud shrill cry of "he he he-he-he." It is omnivorous, and feeds largely upon caterpillars and locusts as well as fruit. On account of the length of its bill it has a curious way of feeding: it first takes the object into its bill, and then, by jerking the head backwards, throws it fairly into its throat. It visits the gardens in the winter and eats a quantity of bananas and tomatoes. We constantly saw parties of five or six of the Ground Hornbill (*Bucorvus abyssinicus*) dotted over the bare hills outside the forest. It is a ground-bird, very large and heavy, and instead of hopping, like the Tree Hornbills, walks well, and when aroused takes a short run and flies some distance before again alighting. It is all black, except the white primaries, which are only seen when it is flying. Its voice has a booming sound and can be heard a long distance. It is often heard crying before rain, from which the natives think it has the power of bringing rain; they are very superstitious regarding this bird, and believe that if one is killed near their kraals some misfortune will be sure to happen. We once found a nest of a pair of these birds; it was built of sticks in a large tree standing by itself. In it were two young ones, one of which we reared and had for a long time tame. It had a voracious appetite, which nothing seemed able to appease, and at last we had to part with it, as it took to destroying poultry, swallowing the young chickens whole! This Hornbill is very useful in destroying snakes; fortunately it is one of the few birds protected by law. We obtained from the same nest a specimen of their eggs; the shell is very strong, of a dull white colour, and as large as that of a Goose.

On the 4th September we resumed our cart and trekked on to the Inlalaas, and from there over ugly country to the Umbezani. Journeying on for seven hours over country nearly level, we arrived at the Inyoni district, where there is a good store. Three and a half hours brought us to the Tugela, and with the help of extra oxen we crossed over into the land of civilization again.

[To be continued.]

XXXII.—Various Notes on Humming-Birds.

By ERNST HARTERT.

Genus GLAUCIS.

+ *Glaucis hirsuta* is a very variable and therefore somewhat troublesome species. The sexes differ in size, but very slightly in colour. The young birds have narrower and much more pointed rectrices. There may *possibly* be some subspecific forms, but the materials available in our museums at present (and I have seen the specimens in the British Museum, in Count Berlepsch's and Boucard's collections, and in that of Mons. Simon and at Tring) do not, in my opinion, enable us to separate them. Boucard (Gen. H. B. p. 363) has kept as distinct species *G. mazeppa*, *lanceolata*, and *melanura*, but I quite agree with Salvin and Simon that none of these can be upheld. The characters given by Boucard to distinguish *G. lanceolata* are exactly those of a young bird, as rightly given by the same author under his generic characters. On p. 364 Boucard describes as new species *G. rojasi* from Caracas and *G. roraimæ* from Mt. Roraima. All the skins of *G. roraimæ* seem to be immature individuals and not to differ from immature *G. hirsuta* of other countries. *G. rojasi* is exactly like *G. roraimæ*: I shall therefore place both names among the already numerous synonyms of *G. hirsuta*. On p. 402, Boucard described *Glaucis columbiana*, n. sp., from Rio Dagua, in W. Colombia. This bird is very small and characterized by a uniform cinnamon under surface, and may possibly be specifically distinct. Its wing measures 53 mm. As, however, the specimens are not quite adult, this must remain an open question at present.

The type of *Rhamphodon chrysurus*, Count Berlepsch informs me, is not in the Dresden Museum; it is therefore advisable to quote this name *with a query* among the synonyms of *Glaucis dohrni*, to which it seems to belong.

Genus PHAËTHORNIS.

Although less uniform in structure than many other genera, this genus can always easily be recognized; but the

genus *Pygmornis* must undoubtedly be united with it, as it cannot be sharply separated from *Phaëthornis*, such forms as *P. squalidus*, and especially *P. rupurumii*, Bouc., completely bridging over the gap between the two groups. Salvin's treatment of the species of this somewhat difficult genus is no doubt excellent. With regard to *P. emiliæ*, however, I may say that it is impossible to draw a well-defined line between it and *P. guyi*, and that it can only rank as a subspecies of the latter.

Boucard has described several new species and split the genus up into seven genera, after the Reichenbachian and Bonapartean fashion. None of these genera have any claim to generic rank, according to the ideas of modern Trochilidists, but two of his species are excellent. With *P. emiliæ* Boucard unites *P. yarugui*, but I think that the wholly steel-blue tail of the adult bird, the darker colour of the underparts, the presence of malar and superciliary stripes even in old birds, the whitish colour of these stripes in young birds, and other less conspicuous characters distinguish it sufficiently well. The typical *P. superciliosus* is known to Boucard only from "Guiana," while he justly separates *P. guianensis*, from several places in British Guiana, and also the birds from the Upper Amazons, under the name of *P. consobrinus*. All these three are united by Salvin under the name of *P. superciliosus*. I find that Cayenne birds (typical *P. superciliosus*) are quite distinct, being greyish brown on throat and breast, without a well-defined gular stripe, and larger. All the specimens from the Andes and the Upper Amazons are lighter below, with a more distinct gular stripe, smaller, and the bill finer. Therefore I cannot unite them with the dark *P. superciliosus* of Cayenne. The small light form from British Guiana, which Boucard named *P. guianensis*, is very similar to the Andean bird, *P. moorei*, but differs from it in being still lighter, more rusty and not so brown below, especially on the abdomen and sides of the throat. It may therefore stand as a subspecies. This is not the only case in which we have in British Guiana a form more resembling, and even hardly or

not separable from, the birds of the Andes, while close by, in Cayenne, we meet with a different form.

P. longirostris I consider very closely allied to *P. moorei*, but separable not only by the colour of the rump and upper tail-coverts, the latter being rusty buff with two narrow dark bars (instead of bronze-green with rusty buff edges!), but also by its longer wings and longer bill. The female seems to be a little smaller, as is the case in *P. superciliosus*.

P. longirostris was first described in the 'Echo du Monde Savant' for 1813, no. 45, p. 1070. The only available collection of the ornithological papers in that magazine is the one belonging to the library of the Zoological Society of London. There I have looked up the original description of *P. longirostris*, and found that it was described as coming from "Guatimala," and that the article is by Mons. Delattre alone. The locality and the sentence, "Queue étagée, à penes noires, bordées de roux," clearly show that the name *P. longirostris* belongs to the southern form, with deep rusty buff edges to the outer rectrices. This form is spread all over Central America south to North Colombia (Baranquilla, Remedios, Santa Marta), while the West-Ecuadorian bird, as shown below, is my *P. baroni*. I cannot detect any differences of importance between skins from the different parts of Central America, but Mexican specimens, of which I have a series from Chilpancingo and Jalisco, differ very conspicuously in having the outer rectrices tipped with *white*, instead of rusty buff. The tail is 3 to 5 mm. longer, the middle line of the throat lighter and therefore more conspicuous. These characters, especially the white edges to the outer rectrices, are not to be found in any of the very numerous skins from Central America which I have examined. Therefore I have no hesitation in separating the Mexican form, which I name

+ PHAËTHORNIS MEXICANUS, sp. nov.,

the type, from Dos Arroyos in Chilpancingo, being in Mr. Rothschild's Museum. The two skins from "South Mexico" in the British Museum seem to point a little

towards *P. longirostris*, having a small buff spot at the base of the white tips to the outer rectrices. It is therefore possible that future researches may degrade *P. mexicanus* to subspecific rank, but it certainly cannot be confounded with *P. longirostris*. Boucard, Humm. B. 1892, p. 83, and Gen. Humm. B. p. 377, described as a new species *P. panamensis* from Panama and Veragua; but his types are the same as *P. cassini*, Lawr., a form which seems slightly richer in colour than typical *P. longirostris* from Guatemala, which, however, in my opinion, cannot be separated without much further evidence.

In 1894, in Nov. Zool. i. p. 57, I mentioned a bird shot by Mr. O. T. Baron at Naranjal, near the Rio Pescado, in Western Ecuador, as doubtfully belonging to *Phaëthornis superciliosus* (L.), and promised to "speak of this bird again." The time for this has now come, since I have been able to examine three more specimens of this bird—one more from Naranjal, one from Western Ecuador, bought as *P. superciliosus* from H. Whitely, and one from Esmeraldas, West Ecuador, formerly in Mr. Selater's collection, now in the British Museum. This last bird is the one mentioned by Selater in P. Z. S. 1860, p. 296, as *Phaëthornis moorii*, while in the Cat. B. xvi. p. 273 it is enumerated as specimen *f*¹ of *P. longirostris*. It is certainly neither of the two, but a distinct new species, which I wish to name

PHAËTHORNIS BARONI, sp. nov.,

in honour of Mr. Baron, who already in 1893 suggested to me that it was a new species, but I did not see sufficient evidence of it then. *P. baroni* differs from *P. longirostris* in having the tips of the outer rectrices bordered with pure white. Mr. Salvin, who does not separate the large Mexican form with the white-tipped outer rectrices, says that southern examples have these tips buff; but certainly the West-Ecuadorian birds are the southernmost ones, and yet they have these tips snow-white. Besides the different colour of the tips of the outer rectrices, the wings and tail of *P. baroni* are much shorter, the abdomen is paler and not so buff, the

under tail-coverts are almost pure white, and *all* the feathers of the upper parts have pale buff edges and a narrow dark subterminal line. This last character is generally a sign of immaturity, but the four birds that I have studied are evidently fully adult specimens. The same character, though the edges are there not pale buff, but rich rusty buff, is found in the West-Ecuadorian *P. berlepschi*, E. & Cl. Hart. (Nov. Zool. i. p. 56), of which I have now seen some more skins.

In *P. baroni* the chin and middle of the throat is rusty buff, the sides of the throat rather dark: "maxilla black, mandible bright orange-red with black tips" (*Baron*). *P. baroni* differs from *P. superciliosus moorei* in having the tips of the outer rectrices bordered with pure white, in the chin and middle of the throat being clear rusty buff, all the feathers of the back having buff edges, and in the colour of the abdomen, but on the whole is, perhaps, nearer related to it than to *P. longirostris*. The measurements of the type of *P. baroni*, from Naranjal, are as follows:—Total length about 150 mm., wing 58 (59 and 60 in the others), central rectrices 68, lateral 23, exposed culmen 39.

P. bolivianus is puzzlingly near to *P. longirostris*, but unless future explorations shall show that it occurs in the long stretch of intervening countries it must be kept as a species, otherwise I should treat it as a mere subspecies.

P. apheles, Heine, J. f. O. 1884, p. 235, is, according to Berlepsch, probably a distinct species, closely allied to his *P. nattereri*, but differing in its pure black and broad sub-apical band to the outer rectrices, and in its shorter wings. In the 'Catalogue of Birds' I do not find it mentioned.

P. garleppi, Boucard, has been described from a duplicate specimen received from Count Berlepsch, who has a series from the same locality, and the Count informs me that he cannot distinguish his Bolivian skins from the typical *P. pretrii* from Brazil. It may therefore be dismissed without the slightest hesitation.

P. gounellei, Boucard, is a good species, nearest allied to *P. squalidus*, and not to *P. nattereri*, Berlepsch, which is also a good species and not a form of *P. pretrii*. The most

obvious character of *P. nattereri* is the form and coloration of the rectrices: they are very much narrower than in *P. longuemareus*, which is of all species the nearest ally of *P. nattereri*. *P. rupurunii*, Bouc. (spelt *rupurumii* in the first description, Humm. B. ii. p. 1, afterwards, Gen. Hum. B. p. 384, altered into *P. rupununii* and *P. rupuninii* in the index, while the name of the river is Rupuruni), is a very distinct species of small size, the tail being in form between that of a "*Pygmornis*" and a *Phaëthornis*.

A number of additions and changes will be necessary in the group of small species generally called *Pygmornis*.

P. riojæ, Berlepsch, from North Peru, is, judging from the description, closely allied to *P. striigularis*, but differs in having a tuft of greenish-black feathers in the middle of the breast, like *P. pygmaeus* and allies, while the narrow white borders to the rectrices are not a distinguishing character, being also found in fully adult specimens of *P. striigularis*.

P. chapadensis, Allen, Bull. Amer. Mus. N. H. 1893, p. 122, from Matto Grosso, is evidently the same as Berlepsch's *P. nattereri*, as a comparison of the descriptions will show at once.

Eremita whitelyi, Bouc. Gen. Humm. B. p. 390, is certainly not different from *Pygmornis episcopus*. The British Museum possesses skins from the same localities as those whence Boucard's types came.

With the best intentions to agree with the conclusions of others, I cannot possibly see that there are sufficient reasons for considering *P. viridicaudata* to be the female of *P. idaliæ*. Although the males of some species as they increase in age grow darker on their under surface, there is no case in which the male is dark grey below, the female rufous, nor has any female longer wings. The longer tail of *P. viridicaudata* is also, in my opinion, not the character of the female sex, but a specific peculiarity, as the rectrices are not rounded and broad, but pointed, and as the birds seem to be quite adult. I trust that future explorations in Brazil will confirm my view on this point, and that we shall learn the exact home of both *P. idaliæ* (= *P. obscura*) and *P. viridicaudata*.

P. nigricinctus and *P. pygmaeus* can only be treated as subspecifically allied. Even in the British Museum collection we find specimens of the former from Bolivia which hardly, if at all, differ from one or two of the series of the latter species. In fact in Bolivia the somewhat intermediate forms seem to be the rule. Mr. Arthur Maxwell Stuart has sent to the Tring Museum four specimens which he shot at San Augustin, in Eastern Bolivia, at an elevation of about 3500 feet. In these four birds about one-third of the mandible is black, while in *P. pygmaeus* about one-half is black, in typical *P. nigricinctus* only the utmost tip. However, this character is evidently variable, and therefore I cannot treat these Bolivian skins as belonging to an intermediate species or subspecies, as I do not see any other constant characters to separate them by.

One new species has nevertheless been discovered by Mr. A. M. Stuart in E. Bolivia, which I described as *Phaëthornis stuarti* at the April meeting of the B. O. C. (see below, p. 442). As it is, I shall now have to recognize the following forms of the genus *Phaëthornis* :—

1. *P. gnyi gnyi* (Less.). Coastal hill-ranges of Venezuela, Trinidad.
2. *P. gnyi emilice* (Bourc. & Muls.). Andes, from Costa Rica to Peru.
3. *P. yaruqui* (Bourc.). Ecuador.
4. *P. superciliosus superciliosus* (L.). Cayenne.
5. *P. superciliosus guianensis* (Boucard). British Guiana.
6. *P. superciliosus moorei* (Lawr.). Eastern slopes of Andes in Colombia and Ecuador.
7. *P. baroni*, Hartert. West Ecuador.
8. *P. longirostris*, Delattre. Central America to North Colombia.
9. *P. mexicanus*, Hartert. Mexico.
10. *P. bolivianus*, Gould. Bolivia.
11. *P. hispidus* (Gould). Upper Amazons.
12. *P. symmatophorus*, Gould. Ecuador and Cauca Valley.
13. *P. berlepschi*, Hartert. W. Ecuador.
14. *P. anthophilus* (Bourc. & Muls.). Colombia and Venezuela.
15. *P. eurynome* (Less.). Southern Brazil.
16. *P. squalidus* (Temm.). S.E. Brazil.
17. *P. gounellei*, Bouc. Brazil.
18. *P. augusti* (Bourc.). Colombia to Guiana.
19. *P. pretrii* (Less. & Delattre). Brazil.
20. *P. bourcierii* (Less.). Guiana to the Andes.

21. *P. philippi* (Bourc. & Muls.). Bolivia and Amazons Valley.
22. *P. rufurunii*, Bourc. British Guiana.
23. *P. griseigularis*, Gould. Colombia to Peru.
24. *P. riojæ*, Berlp. N. Peru.
25. *P. striigularis*, Gould. Colombia to Peru.
26. *P. adolphi*, Gould. S.E. Mexico, Central America.
27. *P. longuemareus* (Less.). Cayenne and Trinidad.
28. *P. nattereri*, Berlp. Matto Grosso.
29. *P. idaliæ* (Bourc. & Muls.). Brazil.
30. *P. viridicaudatus* (Gould). Brazil.
31. *P. episcopus*, Gould. British Guiana.
32. *P. pygmæus pygmæus* (Spix). Cayenne and Brazil.
33. *P. pygmæus nigrinctus* (Lawr.). Upper Amazonia to Bolivia.
34. *P. stuarti*, Hartert. East Bolivia.
35. *P. apheles*, Cab. North Peru.

The Catalogue of Birds enumerates 24 species of *Phaëthornis*, and one as not known to the author, while Mons. E. Simon, in 'Feuille des Jeunes Naturalistes,' 1897, p. 87, says that the genus consists of 27 species, not counting subspecies, and does not recognize Nos. 7, 9, and 34 of my list.

Genus CYANOLESBIA.

Mr. Salvin, in Cat. B. xvi. pp. 137-140, recognized four species of this genus, viz.: *C. gorgo*, from Colombia and Venezuela; *C. cælestis*, from Colombia and Ecuador; *C. mocoa*, from Ecuador and the Cauca Valley; *C. smaragdina*, from Bolivia. Under *C. gorgo* he mentions several forms, and says: "It is quite possible that several well-marked forms are here united, but most of the specimens before me have their origin too indefinitely marked to justify my attempting their separation." This remark of the author was very true, and one may add that it is a general fault of all collections of Trochilidæ that too many specimens are "trade-skins" from the Indians of Bogotá, Guatemala, Brazil, Guiana, Cayenne, and other places. The origin of the so-called Trinidad skins is, in my opinion, not yet known at all. The grand material brought together by Buckley in Ecuador and Bolivia, too, was carelessly collected, none of his skins having labels with dates, sexes, and other details. Skins with sufficiently exact labels are compara-

tively rare in all collections. In view of these circumstances Mr. Salvin's caution with regard to the different forms of the *gorgo*-group of *Cyanolesbia* was wise; but soon after the appearance of his work, the great continental *Trochilidist*, our learned friend Count Berlepsch, described (J. f. O. 1892, pp. 453, 454) two distinct forms, viz.: *C. emmæ*, not rare in Bogotá collections; and *C. caudata*, from the Andes of Venezuela. A large series of skins from the coast-ranges of mountains behind Puerto Cabello, in Venezuela, enabled him also to recognize the constancy of *C. margarethæ*. In 1894 (Nov. Zool. i. p. 47) I gave a new complete key of the genus *Cyanolesbia*, including all the above forms as follows:—1. *C. griseiventris*, 2. *C. mocoa*, 3. *C. mocoa smaragdina*, 4. *C. emmæ*, 5. *C. gorgo*, 6. *C. gorgo margarethæ*, 7. *C. cælestis*, 8. *C. caudata*.

From this view I see no reason to differ, except that I am inclined to regard forms 4, 5, 6, and 8 as only subspecifically related. Then it should be added that *C. emmæ* and *C. caudata* have been renamed—"if they should prove distinct species"—*C. columbiana* and *C. meridana* by Boucard in November, 1895 (Gen. Humm. B. pp. 97, 98), who has also very clearly stated their differences.

GENUS CHRYSOLAMPIS.

Here I may mention that a carefully dissected series of *Chrysolampis mosquitus*, collected by Dr. Percy Rendall in Trinidad and Tobago, shows that my former statement ('Ibis,' 1893, p. 299), that the birds described as females are the young, and those described as young are the adult females, is quite correct. Although I knew I was right, this is worth mentioning, as somebody *might* have thought I had dissected my birds wrongly. Dr. Rendall's birds also corroborate my assertion that the old females very often have a line of glittering feathers along the throat. In fact, Dr. Rendall tells me that all fully adult females have this character.

Chrysolampis giglioli, Oust. ('Naturaliste,' 1885, p. 3), is an artefact—a *Chrysolampis* with the tail of a *Florisuga*,—as

already quite correctly stated by Boucard in Gen. Humm. B. p. 57.

Genus THALURANIA.

In Nov. Zool. iv. p. 150, I mentioned that the Tring Museum had received some skins of *Thalurania balzani*, Simon, collected by Mr. Arthur Maxwell Stuart on the Beni River in Eastern Bolivia. They are five adult males, two females, and one young male. The two females, the young male, and two adult males have the under tail-coverts pure white, while the other three adult males have white under tail-coverts with dark brown centres. All these were shot at Salinas: one at Reyes, in low country on the Beni River; while at San Augustin, 3500 feet high, Mr. Stuart collected three adult males, two young males, and one female of *T. jelskii*. In all the males of that species the under tail-coverts are deep steel-blue, nearly black, with more or less conspicuous whitish edges towards the base of the longest feathers; in the female they are dark ashy with metallic green centres. The bill of *T. balzani* measures from 18–19 mm., the wing 53–54 mm., the tail (in the males) 35–38 mm.; while in the males of *T. jelskii* from San Augustin the bill is 18–18·5 mm., the wing 56–58 mm., the tail 40–43 mm. Other differences between these two birds I do not see.

Genus ERIOCNEMIS.

In Nov. Zool. i. p. 59 (1894), E. & Cl. Hartert described as a new species an *Eriocnemis evelinæ* from the Rio Pastassa in East Ecuador. When doing so they compared it with *E. godini*, and attached special value to the red base of the mandible. However, a closer study, especially of young individuals of *E. vestita* (kindly lent me by Count Berlepsch) and of *E. smaragdinipectus*, shows that the bird from the Rio Pastassa belongs to this group. In fact, it has nothing to do with *E. godini*, which is larger and does not show the bright glittering upper tail-coverts. The red base of the mandible is no doubt a sign of youth, and so is the greenish shade on the under tail-coverts. Only the very strong

bronzy shade below is peculiar, but that may be either individual or a character of that age in which our specimen is. It will therefore be best to place *E. evelinæ* among the synonyms of *E. smaragdinipectus*, though we may, if we wish to be very cautious, add a query, since *E. smaragdinipectus* has not yet, to our knowledge, been met with so far east. It is also Count Berlepsch's opinion that *E. evelinæ* is only the young of *E. smaragdinipectus*.

E. aurea, A. B. Meyer (Auk, 1890, p. 315), which I have already discussed in Nov. Zool. iv. p. 148, is *no doubt* a young female of *E. cupreiventris*, for Count Berlepsch possesses Bogotá skins which are quite similar, and others which come between it and other undoubted females of *E. cupreiventris*: we may therefore, without hesitation, place *E. aurea* among the synonyms. The dark golden shade on golden-green feathers is sometimes due to skins having been relaxed and made damp for mounting.

Genus DOLEROMYIA.

We can at present only recognize one single species of this genus. I have two typical specimens of *D. pallida*, Richmond, from the island of Margarita, and after careful comparison with typical *D. fallax* from Venezuela I cannot find even the slightest difference between them. I lent one of the two Margarita skins to Mons. Eugène Simon, in Paris, and he also kindly informed me that it was indistinguishable from Venezuelan *D. fallax*. On the other hand, the two North Colombian skins in the British Museum have decidedly longer beaks; and as also Mons. Simon wrote to me that the Colombian skin in his collection was "un peu différent" from the Venezuelan and Margarita skins, it seems probable that there is a (typical) Eastern Venezuelan and a Western Colombian form of *D. fallax*. Neither *D. fulviventris* nor *D. cervina* refer to the Colombian long-billed form; therefore this form would require a new name if really distinct, but it requires more evidence to prove that this is the case.

Genus IOLÆMA.

A skin which agrees in every respect with the type of *I. luminosa*, Elliot, in the British Museum, is now in Mr. Rothschild's collection. It is also an immature bird like the type, and, like it, a trade-skin from a Bogotá collection.

Genus FLORISUGA.

The two species of the genus *Florisuga*, as accepted by Mr. Salvin, differ considerably in structure, for in *F. mellivora* it is not the *central rectrices* of the male that are bluish green, but the extreme upper *tail-coverts*, which almost reach the tip of the tail; whereas in *F. fusca* the two middle rectrices are dark green, or almost purplish, and conspicuously shorter than the rest, while the upper tail-coverts only reach the middle of the tail.

In *F. mellivora* the sexes are unlike, while they are alike in colour in *F. fusca*. The beak in the latter is slightly shorter in comparison with the size of the bird. It is therefore perhaps just as well to follow Boucard in keeping the two generically separated. Mr. Boucard has also created three new names in the genus *Florisuga* in its more restricted sense. In Humm. B. i. p. 18, he described as a new species *F. sallei*; but there is no doubt that this is not a species at all, but merely a more golden variety of *F. mellivora*, for specimens which are exactly alike occur in Brazil, Peru, Guiana, and elsewhere. The type is a not fully adult male.

Mr. Boucard has further "proposed" the names *F. guianensis* and *F. peruviana* for specimens from Guiana and Peru, "if they should prove distinct." The types of both these proposed names are somewhat immature individuals of *F. mellivora*, as shown by the greater extent of the metallic dark colour and the central rectrices, otherwise they do not differ at all.

Genus HELIANGELUS.

In this genus Mr. Boucard has described two remarkable new species. One he has called *H. henrici*; but his description appeared at the same time as Mr. Salvin's description of

H. laticlavus, which is the same bird. The number of the 'Humming Bird' in which the description of *H. henrici* appeared is dated 1st April, 1891, and it certainly came out in April. Salvin's description is in the April number of the 'Annals and Mag. of Nat. Hist.,' a journal which is always in the hands of its subscribers on or soon after the first of every month. The descriptions, therefore, are exactly contemporary; and as Mr. Salvin's description was based on three skins, and Mr. Boucard's on one only, and as Mr. Salvin's type has been figured (Cat. Birds B. M. xvi. pl. v. fig. 1), we prefer to adopt his name for this distinct species.

The other species which Mr. Boucard described is *H. rotschildi* (sic), from a Bogotá collection. In this bird, with its deep purple upperside, the colour of the throat is of a fading golden bronze. Although the coloration of this bird is very peculiar, it is a true *Helianthus*. In this Mons. Simon (*in litt.*) also agrees with me.

Genus POLYTOMUS.

The name of *viridissimus* cannot be used for the second species described in the 'Catalogue of Birds.'

Vieillot did not give this name to the bird figured in the 'Oiseaux Dorés,' i. pl. xlii., which he mentioned in the Nouv. Dict. vii. p. 375, but identified his bird (which seems to be what we now call *P. viridissimus*) with Gmelin's *Trochilus viridissimus*. Gmelin's *T. viridissimus*, however, is not the *Oiseau-Mouche tout vert* of Audebert and Vieillot, but the *All-green Humming-Bird* of Edwards (Gleanings Nat. Hist. iii. p. 316, pl. cclx. fig. 1) and the *Orvert* of Buffon (Ois. vi. p. 17), which Salvin quotes as a synonym of *Chlorostilbon prasinus*. It probably is the same as *prasinus* of Lesson, but it is without locality, and the figure and description are not exact enough to identify it with certainty with any of our recognized forms of *Chlorostilbon*. Therefore it may be better to retain the name *C. prasinus* (Less.) now in common use, although it is not much more certain than Gmelin's *viridissimus* (*cf.* Hartert, Nov. Zool. iv. pp. 150, 151).

XXXIII.—*Proceedings at the Anniversary Meeting of the British Ornithologists' Union, 1897.*

THE Annual General Meeting of the British Ornithologists' Union was held at the rooms of the Zoological Society of London, 3 Hanover Square (by permission of the Council of that Society), on Wednesday, the 5th of April, at 6 P.M., Mr. P. L. SCLATER, M.A., Ph.D., F.R.S., in the Chair. The Minutes of the last Annual Meeting having been read and confirmed, the Report of the Committee was read, which stated as follows:—

“Amongst the losses by death since the last Anniversary we have to record that of our President, Lord Lilford, an original Member of the Union, who had held the office for 19 years. Besides this three other Ordinary Members have died, viz. Arthur Dowsett, Esq., Sir Edward Newton, K.C.M.G., and Hugh Neville, Esq. One Member has withdrawn, viz. Sir T. D. Gibson Carmichael, Bart., and two have been removed under Rule VI., viz. D. S. W. Nicholl, Esq., and W. C. Shaw, Esq.

“The number of the Members of the Union is now 314, consisting of 283 Ordinary, 1 Extraordinary, 10 Honorary, and 20 Foreign Members.

“There are 24 Candidates for the Ordinary Membership.

“The General Index for the last three series of ‘The Ibis’ has been completed and will shortly be ready for distribution.”

The accounts for the year 1896 were then presented by the Secretary, and approved of by the Meeting.

The following Candidates were then balloted for and declared to be duly elected Ordinary Members:—

The Rev. Hubert D. Astley, F.Z.S., Chequers Court, Tring.

John Benson, Holly How, Coniston.

William Berry, B.A., LL.B., Tayfield, Newport, Fife.

The Hon. Ivo F. Bligh, Southfields Grange, Wandsworth, S.W.

The Rev. Horatius N. Bonar, Free Church Manse, Salton, Pencaitland, E. Lothian.

Henry A. Bryden, Gore Park Road, Eastbourne.

Alfred J. Cholmley, F.Z.S., Place Newton, Rillington, Yorkshire.

E. N. Fenwick-Fenwick, Oxford and Cambridge Club, S.W.

J. Nigel Gurney, Sprowston Hall, Norwich.

Henry B. Hewetson, F.Z.S., 11 Hanover Square, Leeds.

The Rev. John E. Kelsall, East Boldre, Beaulieu, Hants.

The Rt. Hon. Lord Lilford, F.Z.S., Lilford Hall, Oundle.

George E. Lodge, F.Z.S., 5 Verulam Buildings, Gray's Inn, W.C.

John C. M'Lean, Waikohu, Poverty Bay, New Zealand.

Col. Edward S. Mason, 20 Minster Yard, Lincoln.

Daniel Meinertzhagen, Mottisfont Abbey, Romsey.

William Mitchell, 16 Grosvenor Street, W.

Henry Munt, 83 Kensington Gardens Square, W.

Oscar Neumann, 10 Potsdamer Strasse, Berlin, W.

Capt. Eric Streatfield, Gordon Highlanders, Aldershot.

Charles Whympers, 50 Berners Street, W.

Allan R. Wilson, Wadham College, Oxford.

Harry F. Witherby, Heathfield, Eliot Place, Blackheath.

John J. B. Young, M.A., Richmond Park, near Sheffield.

Mr. F. Du Cane Godman, F.R.S., was elected President, and Mr. Osbert Salvin, M.A., F.R.S., was elected Secretary of the Union for the ensuing year, and Mr. A. H. Evans, M.A., F.Z.S., and Dr. R. Bowdler Sharpe, F.L.S., F.Z.S., were elected into the Committee in the place of Lt.-Col. L. H. Irby, who retired by rotation, and Osbert Salvin, Esq., M.A., F.R.S., who had become Secretary.

It was agreed that the Committee appointed at the last Meeting to consider Mr. Selater's plan for a new Synopsis of Birds should be reappointed, with power to add to their number.

After a vote of thanks to the Chairman, the Meeting adjourned.

The Annual Dinner, subsequently held at Limmer's Hotel, was attended by 36 Members and guests.

XXXIV.—*Bulletin of the British Ornithologists' Club.*

Nos. XLIII.—XLV.

No. XLIII. (March 31st, 1897.)

THE forty-second Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 17th of March, 1897.

Chairman : P. L. SCLATER, F.R.S.

Members present :—E. BIDWELL, F. C. CRAWFORD, P. CROWLEY, W. E. DE WINTON, A. H. EVANS, JOHN GERARD, W. R. OGILVIE GRANT, J. G. MILLAIS, P. W. MUNN, E. NEALE, R. NESHAM, HEATLEY NOBLE, C. E. PEARSON, H. J. PEARSON, H. L. POPHAM, H. SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), W. B. TEGETMEIER, N. F. TICEHURST, A. B. R. TREVOR-BATTYE, H. M. WALLIS, WATKIN WATKINS.

Visitors : C. E. FAGAN, E. F. FENWICK, H. WARRAND, RONALD WEBBER, JOHN WHITEHEAD.

The Treasurer informed the meeting of the death of an esteemed member of the Club, Mr. William Graham. It was unanimously voted that a letter of condolence should be sent to Mr. Graham's family.

Mr. H. L. POPHAM exhibited some interesting birds and eggs from the Yenesei River, including eggs of *Bernicla ruficollis*, *Limosa lapponica*, *Phalaropus fulicarius*, *Emberiza pusilla*, *Turdus fuscatus*, *Geocichla sibirica* (probably), and *Stercorarius pomatorhinus*, the eggs of the last-named bird being almost the first authentic ones ever shown. Mr. Popham also showed the eggs of the Wood-Sandpiper laid in an old Fieldfare's nest, with a specimen of the bird shot therefrom.

Mr. J. G. MILLAIS exhibited a male *Phasianus colchicus* assuming female plumage, an extremely rare occurrence. He also showed a Wigeon (*Mareca penelope*) and some Common Redstarts (*Ruticilla phoenicea*) in which the same phenomenon was apparent.

Mr. JOHN WHITEHEAD, who was warmly welcomed by the Members on his return from his successful expedition to the Philippines, gave an account of his travels in Luzon.

Mr. WHITEHEAD also described a new Fruit-Pigeon from the highlands of Negros, as follows :—

PTILOCOLPA NIGRORUM, n. sp.

Similis *P. griseipectori* (Bp.), sed plagâ præpectoralî nigrâ, nec cinereâ, facîlè distinguenda. Long. tot. 13·0 poll., alæ 8·3, caudæ 4·8, tarsi 0·85.

Hab. Negros, Philippine Archipelago.

The adult female was shown to be similar to the female of *P. griseipectus*. The soft parts were as follows :—"Base of bill coral-pink, tipped with dull white; iris pale straw-yellow; feet coral-pink."

Mr. HUGH WARRAND exhibited a specimen of *Perdix montana*, shot by Mr. Peacock Edwardes in Nairnshire.

Mr. OGILVIE GRANT exhibited a female of the Luzon Hemipodè (*Turnix whiteheadi*).

Mr. SCLATER explained two new technical terms, "Topomorph" and "Lipomorph," which he had recently used in his papers on geographical distribution. He proposed to denominate natural groups that were restricted to limited districts—and therefore characteristic of them by their presence—as "Topomorphs," and those natural groups that on the contrary characterized districts by their absence as "Lipomorphs." Thus, in the class of Birds, *Struthio* and *Indicator* were topomorphs of the Ethiopian Region, and *Rhea* of the Neotropical Region. In the Australian Region the family of Woodpeckers (*Picidæ*) was a lipomorph, and *Memura* was a topomorph, &c.

Mr. SCLATER called attention to the issue of the first part of the division Aves (edited by Dr. Reichenow) of 'Das Tierreich.' It contained the *Podargidæ*, *Caprimulgidæ*, and *Macropterygidæ*, an excellent synopsis of which three

families, together with an index, had been compressed by Mr. Hartert, the author of this section, into ninety-eight pages. Mr. Sclater lamented the use of the German language in this great undertaking, as it would render the book almost useless to many ornithologists in England and the United States. It would, in his opinion, have been much better to have employed Latin—the universal language of science, known to every properly educated person in the world—in a work of this cosmopolitan character.

No. XLIV. (April 30th, 1897.)

THE forty-third Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 21st of April, 1897.

Chairman: P. L. SCLATER, F.R.S.

Members present:—PHILIP CROWLEY, W. E. DE WINTON, W. R. OGILVIE GRANT, ERNST HARTERT, SIR HERBERT MAXWELL, Bart., M.P., DR. ST. GEORGE MIVART, F.R.S., H. J. PEARSON, FRANK PENROSE, HOWARD SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), W. B. TEGETMEIER, W. F. URWICK, JOHN YOUNG.

Visitors: Admiral the Rt. Hon. Sir JOHN DALRYMPLE HAY, Bart., K.C.B., DR. CUTHBERT CHRISTY, F. E. MUGFORD.

Mr. OSBERT SALVIN, F.R.S., who had recently examined the collection of Tufted Owlets in the British Museum, communicated the following descriptions of species believed by him to be undescribed:—

SCOPS INGENS, n. sp.

Similis *S. brasiliæ*, et eodem modo coloratus, sed ubique saturatior et valdè major. Long. tot. 10·5 poll., alæ 8·2.

Hab. Ecuador.

SCOPS SANCTÆ-CATARINÆ, n. sp.

Similis *S. guatemalæ*, gastræo absque colore flavo insignis, pectoris colore clarè definito, sed ab hac specie et a

S. brasiliano plumis auricularibus longis, harum pogoniis internis pallidis faciliè distinguendus. Long. tot. 10·5 poll., alæ 7·8.

Hab. Southern Brazil.

+ *SCOPS RORAIMÆ*, n. sp.

S. similis S. guatemalæ, sed minor, et ab hac specie et a *S. brasiliano* maculis quadratis albis primariorum distinguendus. Long. tot. 8·0 poll., alæ 5·9.

Hab. Roraima, British Guiana.

Mr. SALVIN also proposed to describe a new species of *Selasphorus* from Costa Rica as

+ *SELASPHORUS UNDERWOODI*, n. sp.

S. ardenti similis, rectricibus mediis ferè ad apicem utrinque rufo marginatis, arcâ medianâ angustiore purpureo-nigricante et ad apicem viridi leviter lavatâ; rostro multo brevior. Long. tota circa 2·9 poll., alæ 1·45, caudæ 1·05, rostri a rictu 0·55.

Hab. Irazu, Costa Rica (*C. F. Underwood*).

Obs. Mr. Underwood has sent us a single male specimen of this *Selasphorus*, which he shot on the Volcano of Irazu on the 20th Nov., 1896. At first I thought it a fully adult specimen of *Selasphorus ardens*, but its short bill (0·55 instead of 0·65) and slightly differently coloured tail have convinced me that it is a local form of that bird which may well be separated. The colouring of the throat is slightly tarnished, that of the type of *S. ardens* being very bright, some of the feathers not being fully grown; they are, however, rather longer in the present bird, due, no doubt, to their being fully grown. The types of *S. ardens*, which, I believe, are still the only examples known, came from Castillo, in the State of Panama.

On behalf of Mr. G. H. CATON HAIGH, Mr. SAUNDERS exhibited a specimen of the Water-Pipit (*Anthus spipoletta*), shot near the mouth, and on the Carnarvonshire side, of the Glaslyn, North Wales, on the 5th of this month by Mr. Haigh. This was its first recorded occurrence for the west side of Great Britain. Mr. Saunders called attention to the fact

that there was white at the tips of the *second* pair of tail-feathers (as well as on the first pair) at all ages in the Water-Pipit, but never so in *Anthus obscurus*, nor in the Scandinavian *A. rupestris*.

Mr. PHILIP CROWLEY exhibited an interesting albino specimen of a Starling (*Sturnus vulgaris*) which had been shot at Merstham, near Reigate, on the 28th of February last.

Mr. ERNST HARTERT exhibited an example of a new species of Humming-Bird, which he described as follows :—

—PHAËTHORNIS STUARTI, n. sp.

Top of the head brown, with more or less of a metallic green gloss. Hind-neck, interscapulium, back, and upper wing-coverts metallic green. Rump and upper tail-coverts rusty cinnamon. Rectrices dark purplish brown, with dark bronzy-green bases and white tips, the central pair about 10 millimetres longer than the next, and nearly all bronzy green with white tips. Wings deep purplish brown. Chin and upper throat buffy white or whitish buff. Rest of under surface tawny ochraceous, the under tail-coverts lighter, almost white. Breast with a bunch of broad and elongated feathers of a bronzy-brown colour, with paler edges and a sub-terminal darker line. Auriculars black. A whitish-buff superciliary line, beginning above the eye, but not before. Maxilla and tip of mandible black; mandible, except the tip, yellowish flesh-colour (in skin). Total length about 95 mm.; wing 41–42; tail—central rectrices 38–39, next pair 9–10 mm. shorter, lateral pair only about 15–17; bill 22–23.

Mr. Hartert made the following remarks :—

“This new species belongs to the section of the genus *Phaëthornis* which most authors separate as *Pygmornis*. In the *Pygmornis* section it must be grouped with the species which have a dark pectoral zone (Section *b* in the ‘Key’ of *Pygmornis*, Salvin, Cat. B. xvi. p. 280). From the three forms in that section described in the ‘Catalogue of Birds’ it differs principally in having broad *white* tips to the rectrices, and in its *large size*. The tail beneath is darker

and more blackish, the under tail-coverts light, the chin and upper throat whitish. It differs from *P. riojæ*, Berlepsch, principally in having no black on the chin at all.

"Several examples of this new species were collected at Salinas, on the Beni River in Eastern Bolivia, by Mr. Arthur Maxwell Stuart, in whose honour it was named. The same gentleman found *Phaethornis pygmæus nigrincinctus* (Lawr.) in the hills of San Augustin, in Eastern Bolivia, at about 3500 feet elevation."

Mr. ERNST HARTERT exhibited some of the new species of birds which were in the collection recently sent by Mr. Alfred Everett from Flores, viz.: *Pachycephala nudigula*, Hartert, a species remarkable for a large bare red spot on the throat; *Pnoepyga everetti*, Rothschild, which further extended the distribution of that genus; *Zosterops crassirostris* and *Z. superciliaris*, Hartert, two fine and very distinct forms of the large genus *Zosterops*; *Micræca oscillans*, Hartert, a new Flycatcher of, at present, somewhat doubtful affinities; *Brachypteryx floris*, *Orthonocichla everetti*, and *Cryptolopha montis floris*, subsp. nov., very closely allied to *C. montis*.

The Hon. WALTER ROTHSCHILD sent for exhibition a specimen of *Æstelata hæsitata* (Kuhl), a male, killed at Verona Beach, on Oneida Lake, N.Y., on August 28th, 1893, by the Rev. G. A. Biederman, of Utica, N.Y., who had presented it to Mr. Alex. H. Moore, by whom it had been mounted.

Mr. ROTHSCHILD also sent a skin of *Paradisea intermedia*, De Vis. This form was intermediate between *Paradisea augustæ-victoriæ*, Cab., which it resembled on the upper surface, and *P. raggiana*, Sel., to which it was similar below. Specimens of the two latter species were shown for comparison.

Mr. ROTHSCHILD further sent for exhibition skins of *Ruticilla erythrogastra*, Güld., from the Caucasus, and *R. grandis*, Gould, from Central Asia; species which had generally

(for example, by Dresser, Jerdon, Seebohm, and Oates) been confounded, but which proved to be distinct. Further notes on these species would be found in the forthcoming number of 'Novitates Zoologicæ.'

Dr. BOWDLER SHARPE exhibited a skeleton of *Paramythia montium*, which had been forwarded to the British Museum by Mr. De Vis, of the Brisbane Museum. Sir Wm. Macgregor had procured two specimens of this species on Mount Scratchley, where it was not uncommon, and had sent them to Mr. De Vis in spirits.

Paramythia montium was described by Mr. De Vis in 1892, and was referred to the *Sturnidæ*, but the characters of the genus appeared to be so aberrant that in a notice of the genus published by Dr. Selater in the 'Ibis' for 1893 (p. 243) the latter gentleman proposed that a separate family, *Paramythiidae*, should be established for it, "coming nearest to the *Ampelidæ* and to some of the *Dicæidæ*." About the same time, and quite independently, Dr. Sharpe (Zool. Rec. xxix. Aves, p. 50) had also relegated *Paramythia* to a distinct family near the *Eulabetidæ*.

The wings were not perfect in the specimen examined by Dr. Selater, who came to the conclusion that there were only nine primary-quills; but that this was a mistake has already been shown by Mr. Hartert (Nov. Zool. iii. p. 13), and in the wing now exhibited by Dr. Sharpe it was clearly perceptible that the first primary was present, though very minute, and attended by a smaller covert. Thus *Paramythia* was evidently a ten-primaried bird and had a Starling-like wing. An examination of the base of the skull showed that in the form of this portion of the cranium the palate was Starling-like and had a spinous process on the exterior edge of the palatines: indeed, the skull of *Paramythia* was extremely like that of *Calornis*.

Thus, although the genus *Paramythia* appeared to be an aberrant kind of Starling, with long slender legs and an unbroken lamina on the front aspect of the tarsus, yet the structure of the skull and the number of primaries seemed

to refer *Paramythia* to the neighbourhood of *Calornis*, which, however, had very big feet and a scutellated tarsus. In appearance there was much which made *Paramythia* resemble a Cuckoo-Shrike, and one genus of *Campophagide*, viz. *Campocheira*, suggested a sort of relationship, as it had also the sheath of the tarsus entire; but, on the other hand, there were no spiny shafts to the feathers of the rump in *Paramythia*, so that the latter could never be called a Campophagine bird. The skull, too, of *Graucalus* was somewhat of a Laniine type, with the spinous process of the hinder part of the palatine bones developed on the inner posterior angle, though this process appeared to be very broad and blunt in *Graucalus*.

Dr. SHARPE exhibited a specimen of Chernel's Wood-Lark (*Lullula cherneli*), which had been sent to him for examination by Mr. Georg von Almásy, who had written a paper on the form called *Alauda arborea cherneli* by Pražák, in 'Aquila' (vol. iii. p. 209). The characters of this supposed race of *Lullula arborea* were the paler coloration of the upper parts, with less admixture of rufous, the white eyebrow, chin, breast, and abdomen, the whiter edgings to the primaries, upper wing-coverts, bastard-wing, and the whiter spots on the tail-feathers. The bill was also said to be longer.

Specimens agreeing with the Hungarian example of *L. cherneli* sent by Mr. von Almásy were in the British Museum from the following localities:—Gozna, Taurus, Jan. 1 (*C. G. Danford*); Anascha, Taurus, March 18, April 7 (*C. G. D.*); Alamut, Anatolia, Feb. (*C. G. D.*); Seville, Spain, Feb. 20 (*H. Saunders*); Gibraltar, April 21 (*L. H. Irby*); Tangiers, June (*S. G. Reid*).

Dr. Sharpe drew attention to the fact that these pale-coloured specimens had nearly all been shot in spring and summer, when the plumage is rather bleached and worn, and that the colour of the specimens killed in other parts of Europe in autumn and winter was certainly darker, but that it was impossible to distinguish a male killed in July in Southern Norway from the series of *L. cherneli*. Dr. Sharpe was

driven to the conclusion that *L. cherneli* had been founded on specimens in bleached plumage from somewhat arid localities, and he believed that winter-killed individuals in freshly moulted plumage would resemble the ordinary *L. arborea*, while breeding specimens of the latter certainly were not to be distinguished from *L. cherneli*.

Dr. SHARPE exhibited some Weaver-Birds from British Central Africa, sent by Mr. F. J. Jackson from Mau. The female had been described as *Heterhyphantes stephanophorus* in 1891 by Dr. Sharpe, and now Mr. Jackson forwarded the male, which had a rufous head, and was apparently identical with *Symplectes croconotus* of Sjöstedt, from the Cameroons. Of the difference of the sexes in this Weaver-Bird Mr. Jackson said "there is not the slightest question," and he had sent two pairs procured at different places. The presence of a West-African form like *S. croconotus* was less astonishing than appeared at first sight, as Mr. Jackson's collection also contained a specimen of the West-African *Laniecterus quiscalinus*.

Mr. JOHN WHITEHEAD sent a description of a new Flycatcher from the island of Negros, Philippines:—

MUSCICAPULA NIGRORUM, n. sp.

♂ *adult*. Most nearly allied to *M. luzoniensis*, Grant. The general colour of the upper parts less grey, but dark slaty blue as in *M. hyperythra*. The chin is pure white, the rest of the underparts richer orange-buff; belly white.

♀ *adult*. General colour of the upper parts dull slate-grey, and not greyish olive-brown as in the female of *M. luzoniensis*; lores and feathers round the eye whiter; breast and underparts as in the male of *M. luzoniensis*.

Hab. Canloan Volcano, 6000 ft., Central Negros, Philippines.

Mr. TEGETMEIER exhibited a very large egg of a Goose with another perfect egg inside it.

No. XLV. (May 29th, 1897.)

THE forty-fourth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 19th of May, 1897.

Chairman: P. L. SCLATER, F.R.S.

Vice-Chairman: P. CROWLEY.

Members present:—E. BIDWELL, W. E. DE WINTON, Dr. F. DREWITT, E. HARTERT, G. E. LODGE, Sir HERBERT MAXWELL, Bart., M.P., R. NESHAM, E. W. OATES, F. PENROSE, E. LORT PHILLIPS, R. BOWDLER SHARPE (*Editor*), E. CAVENDISH TAYLOR, W. B. TEGETMEIER, N. F. TICEHURST, H. M. UPCHER, H. M. WALLIS, W. WATKINS, L. P. WILLIAMS, C. A. WRIGHT.

Visitors: F. CURTIS, E. A. FITCH, A. J. FITCH, DONALDSON GUNN, ARTHUR HOLLAND, F. C. SELOUS, H. E. S. UPCHER.

Dr. F. PENROSE alluded to the loss which the Club had recently sustained by the death of its Member, C. BYGRAVE WHARTON.

The Hon. WALTER ROTHSCHILD sent some skins of the common Yellow-plumed Bird of Paradise (*Paradisea minor*, Shaw), of which he recognized three sub-species. The typical form inhabited Dutch New Guinea, and he possessed a good series from Arfak, Etna Bay, and Kapaur. It was a small bird, with the wing about 177–189 mm., the tail 130–136, the ornamental plumes from 400 to 460 mm.

The second form, from Jobi Island in Geelvink Bay, differed in its larger size and longer and fuller side-plumes; the wing measured 196–200 mm., the tail 145–150, the ornamental plumes 530–610 mm. in length. Mr. Rothschild proposed to call this form *P. minor jobiensis*, subsp. nov., and of this form he had five skins, collected by Dr. Guillemard and others.

The third was the bird from German New Guinea. It was of the size of the typical form, from which it differed in being darker vinous-brown on the breast, while the chest-feathers were more crisp and produced a slight shield-like appearance,

The yellow bar on the wing was also less distinct in this form. This was the *P. finschi* of A. B. Meyer, although the characters given by him for its distinction were apparently not the most striking. Mr. Rothschild had a number of specimens of it collected by the late Mr. Kubary and Captains Webster and Cotton.

Mr. ERNST HARTERT exhibited the second known specimen of a rare Humming-Bird (*Iolæma luminosa*, Elliot), the type of which, hitherto unique, was in the British Museum.

Mr. E. HARTERT also exhibited a remarkable variety of the Waxwing (*Ampelis garrulus*) from Lapland, with the wax-like tips to the secondaries yellow instead of red.

Mr. E. LORT PHILLIPS exhibited some specimens of birds collected by him during his recent trip to the Goolis Mountains in Somaliland. Among the interesting species obtained by him were the following:—*Hyphantornis spekkii*, *Irania gutturalis*, *Ruticilla semirufa*, *Monticola rufocinerea*, *Zosterops habessinica*, *Anthus sordidus*, *Mirafra gilletti*, *Sylvia blanfordi*, *S. nana*, *Burnesia somalica*, *Lophoceros mediana*, and *Pternistes infuscatus*.

He described the following species as new to science:—

CALENDULA FREMANTLII, n. sp.

C. rostro crasso insignis: rufescens, notæi plumis latè nigricanti-brunneo striatis: pileo vix cristato: regione paroticâ rufescente, maculâ magnâ albâ notatâ: lineâ nigrâ per oculos ductâ: gutture et colli lateribus albis, striâ malari nigrâ distinctâ: subtùs pallidè isabellina, pectore et hypochondriis rufescentibus, vix brunneo vel rufo striatis: maculâ nigrâ distinctâ ad latera præpectoris positâ. Long. tot. 5·7 poll., culm. 0·7, alæ 3·6, caudæ 1·75, tarsi 0·7.

RHYNCHOSTRUTHUS LOUISE, n. sp.

Similis *R. socotrano*, sed minor, rostro debiliore et genis cinerascens nec albis distinguendus. Long. tot. 5·0 poll., culm. 0·5, alæ 3·05, caudæ 1·6, tarsi 0·65.

TRICHOLOEMA BLANDI, n. sp.

T. simile T. stigmatothoraci, sed maculâ rubrâ pectorali nullâ, pileo et gutturi plumis distinctè albido terminatis

facile distinguendum. Long. tot. 4.6 poll., culm. 0.6, alæ 2.5, caudæ 1.3, tarsi 0.8.

Dr. BOWDLER SHARPE described a new species of Francolin from the Wagga Mountains in Somaliland, obtained by Mr. Lort Phillips at a height of 9000 feet :—

FRANCOLINUS LORTI, n. sp.

F. similis F. gutturali et *F. uluensi*, plagâ albâ ad latera colli nigro punctatâ : maculis præpectoralibus saturatè castaneis, rachidibus angustè nigris : hypochondriis saturatè castaneo notatis. Long. tot. 12.5 poll., alæ 6.6.

Dr. SHARPE described two species of Owls as follows :—

SYRNIUM NIGRICANTIUS, n. sp.

S. simile S. woodfordi, sed suprâ nigricanti-brunneum, vix albo stellatum : superciliis et facie laterali purè niveis : præpectore nigricanti-brunneo, vix albo aut fulvo fasciato. Long. tot. 13.5 poll., alæ 9.8.

Hab. Mpapwa, E. Africa. Typus in Mus. Brit.

NINOX EVERETTI, n. sp.

Similis N. reyi, sed maculis pallidis primariorum paucis fulvescentibus, minimè albo quadratim notatis, et abdomine, hypochondriis et tibiis ochrascenti-fulvis, nec albis brunneo maculatis, distinguenda. Long. tot. 9.5 poll., alæ 7.7.

Hab. Siassi Island, Sulu Archipelago (*A. H. Everett*).

Dr. BOWDLER SHARPE exhibited the skin of an apparently new species of *Dicæum* from Mount Masarang in Northern Celebes, collected by Mr. Charles Hose. It was an intermediate form between *D. nigrimentum*, Salvad., and *D. pryeri*, Sharpe. The name proposed was

DICÆUM HOSII, n. sp.

D. similis D. nigrimento, sed gulâ superiore totâ nigrâ distinguendum. Long. tot. 3.2 poll., alæ 1.8.

Dr. SHARPE also exhibited some specimens of birds recently sent by Mr. F. J. Jackson from Uganda, amongst them being several typical West-African forms. The West-

African element in the regions of the Upper Nile district had already been demonstrated by Dr. Sharpe in his account of Bohndorff's collections in the Niam-niam country (Journ. Linn. Soc. xvii. pp. 419-441), and by Dr. Reichenow in his treatise on the birds collected by Dr. Stuhlmann and Emin Pasha on the Victoria Nyanza (J. f. O. 1892, pp. 1-60). Mr. Jackson had, however, been able to add several West-African species to the Avifauna of Uganda, among them being the following:—*Campophaga phænicea* (N'tebi), *Bias musicus* (N'tebi), *Nicator chloris* (Busoga, N'tebi), *Malimbus rubricollis* (N'tebi), *Melocichla mentalis* (N'tebi), *Burnesia leucopogon*, &c.

The following species were described by Dr. SHARPE as new:—

DRYODROMAS RUFIDORSALIS, n. sp.

D. similis D. smithii, sed pileo et notæo toto rufescente, illo saturatiore distinguenda. Long. tot. 5·3 poll., alæ 2·0.

Hab. River Tsavo, Sept. 20, 1894 (*F. J. Jackson*).

LAMPROTORNIS BREVICAUDUS, n. sp.

L. similis L. porphyroptero, sed valdè minor et caudâ conspicuè brevior distinguenda. Long. tot. 11·5 poll., alæ 5·8.

Hab. Elgeyu (*F. J. Jackson*).

The differences in the length of the tail between the Abyssinian birds and those from British Central Africa were so well marked that they seemed to constitute two distinct forms. The tail of *L. porphyropterus* measured 7·7-7·8 inches, but that of *L. brevicaudus* only reached 5·05-5·9 inches. (*Cf.* Sharpe, *Ibis*, 1891, p. 240.)

Mr. JOHN WHITEHEAD sent for exhibition a series of specimens of the genus *Dendrophila* from the Philippine Islands, and pointed out the following interesting facts:—

The Philippine species of *Dendrophila* could be divided into two sections, viz. those with a white loreal spot and a greenish bill, and those with black lores and a red bill. To the last

section belonged the birds from Palawan and Balabac, called *D. frontalis* by Sharpe. *D. corallipes* from Borneo, with its red bill and red legs, was quite distinct.

All the Philippine birds had a white loreal spot, greenish bill, and dark greenish-brown legs. Two species had been described, *D. aenochlamys*, Sharpe, and *D. mesoleuca*, Ogilvie Grant. The former had been described from a Guimaras specimen of Prof. Steere's. Mr. Whitehead showed that the same form was found in Cebu, Negros, and Panay, but that in Samar, Leyte, and Basilan a very much darker form occurred, which was worthy of separation on account of the suffusion of dark lilac over the whole of the under surface of the body. He proposed to call the Samar form

DENDROPHILA LILACEA, n. sp.

D. similis D. aenochlamydi, sed gastræo toto vividè lilascenti-vinaceo, nec lilascenti-brunneo, distinguenda.

Mr. Whitehead also showed that *D. mesoleuca* from the highlands of Luzon looked, at first sight, distinct enough; but on comparing a series from different elevations, it was clear that the bird from the coast-region and the lower elevations of the mountains showed very little difference from *D. aenochlamys*, but that, as higher elevations were reached, there appeared more and more white on the back, and more white on the breast, until typical *D. mesoleuca* was reached.

Messrs. C. B. RICKETT and J. DE LA TOUCHE sent for exhibition examples of the following apparently new species of birds from China :—

BRACHYPTERYX SINENSIS, Rickett, n. sp.

♂ similis *B. crurali* ♂, sed ubique pallidior : subtus pallidè cinerea : loris et fasciâ latâ anteoculari cinereis nec nigris distinguenda. Long. tot. 5·5 poll., culm. 0·6, alæ 2·6, caudæ 1·9, tarsi 1·15.

♀ similis *B. crurali* ♀, fronte, facie laterali et superciliis olivaceo-brunneis, nec rufescentibus : caudâ olivaceo nec rufo lavatâ distinguenda. Long. tot. 5·4 poll., alæ 2·6.

Hab. Kuantun, N.W. Fohkien.

PROPARUS GUTTATICOLLIS, De La Touche, n. sp.

Similis *P. striaticolli*, Verr., sed loris albis, pileo nuchaque brunneis concoloribus, minimè nigro notatis, fasciâ fumosâ circumdatis. Long. tot. 4·6 poll., culm. 0·5, alæ 2·05, caudæ 2·1, tarsi 0·95.

Hab. Kuatun.

YUHINA PALLIDA, De La Touche, n. sp.

Y. similis *Y. nigrimento*, sed ubique pallidior: notæo cinerascens: subtus candida, vix fulvescente tincta.

Hab. Kuatun. (Cf. H. H. Slater, *Ibis*, 1897, p. 173.)

LEPOCESTES SINENSIS, Rickett, n. sp.

♂ [vix ad.]. Similis *L. pyrrhotidi*, Hodgs., sed pileo pallidè brunnescenti-fulvo, nec castaneo striolato: intercapulio nigro, fasciis angustis rufescenti-fulvis notato: remigibus et rectricibus pallidè castaneis, fasciis æquidistantibus nigris transversim notatis. Long. tot. 11·2 poll., culm. 1·7, alæ 5·7, caudæ 3·3, tarsi 1·1.

Hab. Kuatun.

Mr. SCLATER exhibited a set of fourteen photographs containing figures of the eggs and nests of the birds of North Queensland which had been transmitted to him by Mr. D. Le Souëf, of Melbourne, and called special attention to those representing *Podargus papuensis*, *Lalage leucomelæna*, and *Sterna anæsthetæ*, the last being placed under a *Pandanus* palm. These photographs had been sent by Mr. Le Souëf to illustrate his papers on new or rare Australian birds' eggs to be published in 'The Ibis.'

Mr. N. F. TICEHURST exhibited a specimen of the Icterine Warbler (*Hypolais icterina*) shot on the 1st of May, 1897, at Burwash, in Sussex.

Dr. F. PENROSE exhibited a beautiful example of an albino Skylark (*Alauda arvensis*) obtained on Salisbury Plain during the past winter.

Mr. H. E. S. UPCHER exhibited some eggs of the South-African Goshawk (*Astur tachiro*) taken in the Drakensberg Mountains in Natal.

XXXV.—*Notices of recent Ornithological Publications.*

[Continued from p. 286.]

62. *Annals of Scottish Natural History.* Nos. 21 & 22, January and April 1897.

[The Annals of Scottish Natural History, a Quarterly Magazine, with which is incorporated 'The Scottish Naturalist.' No. 21, January 1897, and No. 22, April 1897.]

In No. 21, and after an interval of nine months, Mr. Bolam contributes his second instalment of a paper on the birds of Berwick-on-Tweed, and the third appears in No. 22. The Rev. H. A. Macpherson gives particulars respecting four examples from Kirkeudbrightshire illustrating the rare hybridism between the Red Grouse and the Black Grouse. Sir Herbert Maxwell records the earliest instance known of the nesting of the Great Crested Grebe on the White Loch of Myrton, in Wigtownshire, and mentions other birds which frequent that sanctuary. Among the notes, a second Scottish example of the Barred Warbler (*Sylvia nisoria*) is recorded, this time from Dhu Heartach Lighthouse, Argyllshire, where it was found dead on the morning of September 9th last. In No. 22 Mr. W. E. Clarke gives further particulars of the occurrence of *Pelagodroma marina* at Colonsay, on the west side of Scotland, as already recorded in the 'Bulletin' of the B.O.C. (cf. Ibis, *supra*, p. 262); while several interesting species are mentioned among the notes.

63. '*The Auk*,' January and April, 1897.

[The Auk. A Quarterly Journal of Ornithology. Vol. xiv., Nos. 1, 2, January & April, 1897.]

The last words of our previous notice (*supra*, p. 120) were expressive of satisfaction at the attention which Palearctic birds were receiving in America, and now the second paper in the January number of '*The Auk*' is an essay by Mr. F. E. L. Beal on the food of the Starling, the Rook, and the Wood-Pigeon, based upon reports from Dr. Hollrung, at Halle, and Mr. John Gilmour, in Scotland. The food of the Rook is compared with that of the American Crow; the two

other birds being briefly noticed. There is an interesting report from the A.O.U. Committee on Protection of North American Birds, from which it appears that plume-wearing women in California readily accept the conscience-soothing falsehood which has been freely propagated here, and exclaim, "That 'aigrette' never belonged to a bird: they are simply manufactured feathers!" The slaughter, says Mr. Anthony, is now in all its glory, and at the present rate the "countless thousands" of Herons which nested in Magdalena Bay cannot last long. The advocates of protection are, however, working hard, and are in touch with our Society in England, whose management and literature are highly commended. Dr. A. P. Chadbourne concludes his essay on Individual Dichromatism in *Megascops asio* (illustrated by the frontispiece). Dr. Coues defends his genus *Zamelodia* of 1880 against *Habia*, Reich., of 1850; he must settle the matter with Dr. Stejneger. Mr. E. W. Nelson contributes preliminary descriptions of forty-two new species and subspecies of birds obtained during five years' explorations in Mexico and Guatemala, and founds a new genus *Hylorchilus*, the type of which is *Catherpes sumichrasti*, Lawr. Mr. Oberholser describes a new subspecies of *Dendroica* (sc. *Dendroica*), and Mr. Brewster follows with some criticisms on Mr. Oberholser's nomenclature of various forms of Downy Woodpeckers (*Dryobates*). Among the General Notes, our Mr. J. H. Gurney records his discovery of an adult male Labrador Duck (*Camptolamus labradorius*) in the Museum at Amiens, France; and although this statement may very likely have appeared also in some English journal, we do not recollect it. Mr. J. F. Fannin, of Victoria, B.C., states that he has observed the California Vulture (*Pseudogryphus californianus*) between Calgary and the Rocky Mountains, *i. e.* to the east of that range, and also a considerable distance to the north of its distribution as formerly known. The eighth supplement to the A.O.U. Check-list occupies pp. 117-135.

In the April number, the frontispiece illustrates a paper by Dr. Chadbourne on the spring-plumage of the Bobolink

(*Dolichonyx oryzivorus*), with remarks on colour-change and moulting. The author traverses a statement by Dr. J. A. Allen in Bull. Am. Mus. Nat. Hist. 1896, p. 43, which asserts that in confinement the colour-change in spring is *not* accompanied by "any increase in feather-loss," and states that in the coloured plate belonging to a paper by Mr. F. M. Chapman in 'The Auk' for 1893, p. 309, "it was decided to assist Nature by having the 'moult' of the wings and tail completed by the artist." Dr. Chadbourne makes further observations, which we will not quote. Mr. F. M. Chapman replies, repudiating the imputation, and there we must leave the parties to this triangular duel. By the way, Mr. Millais's paper in 'The Ibis,' 1896, pp. 451-457, has been disposed of in 'The Auk' (pp. 109-111) by "the deadly parallel column." Mr. C. W. Richmond describes ten new species and subspecies of birds obtained by Dr. W. L. Abbott some years ago in the Kilimandjaro district of East Africa. Mr. Anthony has found three new species and subspecies in Lower California; Mr. W. W. Price considers the Pine-Grosbeak from California worthy of subspecific distinction, and Mr. H. C. Oberholser reviews the Marsh-Wrens (*Cistothorus*) with the addition of a new subspecies. Dr. Stejneger claims full specific rank for his *Cephus snowi*, based on a bird from Raikoke Island, Kurils, which he had previously taken to be a melanistic individual of *C. columba*. A great feature of the past winter has been the visitation of Brünnich's Guillemot (*Uria bruennichi*), not only along the coast as far as South Carolina, but also in Indiana, Michigan, and other inland States.

Dr. Cones requires a paragraph to himself, for he seems to have re-entered upon a period of activity which is surprising. He adduces strong evidence that *Fuligula collaris* (Donovan), described in 1809 from an individual said to have been found in Leadenhall Market, had been discovered previously by Lewis and Clarke, near the mouth of the Columbia River. He proposes a new genus, *Dafilula*, having for type *Querquedula eatoni*, Sharpe, from Kerguelen Island. He has satisfied himself that there are three valid subdivisions in Brent Geese, and proposes to recognize *Branta*

berniela glaucogastra [sic]. He gives reasons for placing *Gallinago major*, *Helodromas ochropus*, and *Totanus totanus* (our *T. calidris*) in the American list, as occasional visitors. With regard to the Green Sandpiper, one of the reasons which he assigns for placing it in the genus *Helodromas* is its arboreal nidification, for at the time of writing he was doubtless unaware of the fact that Mr. H. L. Popham had found the Wood-Sandpiper also laying its eggs in old nests of other birds, placed in trees. Dr. Coues goes on to point out "the most General Fault of the A.O.U. Check-List." Formerly the sequence was from the highest (whether Raptures or Passeres) to the lowest forms of birds; but when this arrangement was, as he graphically expresses it, "turned hind part before," the list of families began with the most generalized forms, and ended with those which are highly specialized. This reversal, however, was not generally carried out as regards the genera and species, most of which remain on "the high to low principle"; and this Dr. Coues considers to be "a constitutional vice which can only be eradicated by tearing the List to pieces and putting it together again in better form." We will express no opinion as to how the Code List can be best amended, but we trust that our American cousins will believe that we have long since noticed this inconsistency, although we have not felt called upon to play the ungracious part of the "candid friend." Lastly, Dr. Coues contributes a lengthy and well-deserved eulogy of Professor Newton's 4th Part of the 'Dictionary of Birds,' quoting in full a passage which is almost the only one to which some exception has been taken. There are two words which we think will *not* be found in that master-piece of English: "scientist" and "reliable," to the use of which Dr. Coues is somewhat addicted.

64. '*Avicula*': a new Italian Ornithological Journal.

[*Avicula*, Giornale Ornitologico Italiano. Anno I. No. 1. Siena, 1897.]

'*Avicula*' is a new Italian journal of ornithology, edited by Cav. Sigismondo Brogi, and published at Siena. It is

devoted to the study of the avifauna of Italy and to everything connected with birds in general. The editor has secured the support of Prof. Giglioli and Count Salvadori and of many other correspondents in various parts of Italy, whose names are given on the titlepage. Prof. Giglioli writes on the occurrence of *Corvus tingitanus* in Sardinia, and Sig. Meloni records the first appearance of *Cursorius gallicus* in the same island. Other rare visitors are chronicled, and notices of recent publications and of other ornithological topics are added. We wish our new contemporary every sort of success.

65. *Blaauw's 'Monograph of the Cranes.'*

[A Monograph of the Cranes. By F. E. Blaauw. Illustrated by 22 Coloured Plates (the greater number drawn under the immediate superintendence of Dr. G. F. Westerman) by Heinrich Leutemann and J. G. Keulemans. Folio. Leiden and London: E. J. Brill and R. H. Porter, 1897.]

We are sure that all ornithologists will be pleased with Mr. Blaauw's beautiful volume on the Cranes, which has lately been issued by Mr. Brill in Leiden and Mr. Porter in London. It contains not only a splendid and accurate series of figures of these birds, their young ones and their eggs, but also an excellent text, giving as complete an account as possible of every known species of the family.

The original drawings of the Cranes were made for the late Dr. Westerman by the well-known German artist Leutemann, and bequeathed by Westerman to Mr. Blaauw with an injunction to publish them. This Mr. Blaauw has now done, after adding to the original series figures of *Grus nigricollis* and of the young and eggs of some of the species, prepared by Keulemans.

Mr. Blaauw considers that Dr. Bowdler Sharpe, in his revision of the Gruidæ, published in the 23rd volume of the 'Catalogue of Birds in the British Museum,' has "needlessly augmented the number of genera," which he reduces to three—*Grus*, *Anthropoides*, and *Balearica*. He also declines to recognize three of the species adopted by Dr. Sharpe—

namely, *Grus hilfordi* (= *G. communis*), *G. mexicana* (= *G. canadensis*), and *Balearica gibbericeps* (= *B. regulorum*). As regards the last-named species, Mr. Blaauw points out that authors have made a great error in assigning to it the specific name "*chrysopelargus*, Licht.," the *Ardea chrysopelargus* of Lichtenstein being manifestly nothing more or less than the Black Stork. He therefore restores to the Cape Crowned Crane the specific name "*regulorum*, Bennett." With these suggestions of Mr. Blaauw we are fully prepared to agree.

Thus Mr. Blaauw recognizes in all 16 species of Gruidæ, divided into three genera, and gives good figures of them all—all taken from life, except in the case of *Grus nigricollis*. Besides these we have six more plates devoted to the illustration of the young birds and the eggs, making 22 plates in all.

Only 170 copies of this work have been prepared, and we have no doubt that they will be quickly disposed of. A similar monograph of the Storks would make an excellent companion volume, and we hope that Mr. Blaauw will now devote his attention to this subject.

66. *Brown-Goode, G.—Bibliography of Selater's Publications.*

[Bibliography of the Published Writings of Philip Lutley Selater, F.R.S., Secretary of the Zoological Society of London. Prepared under the direction of G. Brown-Goode. Bull. U.S. Nat. Mus. no. 47.]

The 49th number of the 'Bulletin' of the United States National Museum, lately issued, contains a bibliography of Selater's published writings, prepared under the direction of the late Dr. G. Brown-Goode, and, we believe, one of the last, if not the very last, piece of work that our much-regretted friend brought to a close before his untimely decease. As pointed out by Dr. Brown-Goode in his preface, it was undertaken because most of Selater's writings relate to the birds of Central and South America, a subject to which the ornithologists of the United States are now devoting special attention. The copying and arrangement of the titles was done by Mr. George Arthur Doubleday, clerk in the Zoo-

logical Society's Library, to whom special acknowledgment is offered by the Editor for the manner in which he has performed this part of the work.

After a biographical sketch of Selater, the volume contains a chronological catalogue of the titles of his separate works (26) and of his papers published in the journals of scientific societies and in other periodicals up to the end of 1894—1239 in all. After each title a short analysis of the contents of the publication is added. This bibliography is followed by lists of the new families, genera, and species described and of the species figured in the various publications. An Index of subjects, and an Appendix containing the titles of works and papers published in 1895 and 1896, conclude the volume, of which Selater will be pleased to supply a copy to any member of the B.O.U. who may wish to have it.

67. *Butler on the Effects of Civilization.*

[Indiana: A Century of Changes in the Aspects of Nature. By A. W. Butler. Proc. Indiana Ac. Sci. v. p. 31.]

Mr. Butler sends us a copy of his Presidential Address to the Indiana Academy of Science delivered at Indianapolis in December last. It treats in an interesting and impressive way of the changes wrought in the State of Indiana by the hand of the white man. In the beginning of this century the greater part of the State was one primeval forest of enormous trees, interspersed with meadows and prairie. These were tenanted by bisons in countless numbers, wapitis, deer, and other large mammals. Among the birds, Turkeys, Colins, Ruffed Grouse, and Paroquets were abundant. Passenger Pigeons existed in millions. Now the great trees are gone, and the birds have perished with them, through the destructive energy of "civilized man." "Except in a few localities" there remains "no virgin forest," and as regards birds, a set of new-comers, adapted to the change of environment, has replaced the Paroquet and the Passenger Pigeon in the secondary woods and shrubs.

68. *Büttikofer on Birds from Nias.*

[On a Collection of Birds from Nias. By Dr. J. Büttikofer. Notes Leyden Mus. xviii. p. 161.]

From the collections of Rosenberg, Modigliani as reported on by Count Salvadori, and of Claine as described by Dr. Oustalet, together with additions made by Count Berlepsch from specimens received by him from Mr. W. Thomas, we know of the existence of 104 species of birds in the Malay Island of Nias, near Sumatra. A splendid series recently obtained in Nias by Mr. J. Z. Kannegieter, and received at the Leyden Museum, enables Dr. Büttikofer to make 24 additions to the list, thus bringing up the whole number of the birds of Nias now known to 128. Four of these are new to science, and are named *Ketupa minor*, *Chrysophlegma niasense*, *Artamides kannegieteri*, and *Carpodaga vandepolli*. Amongst the winter visitors to Nias are enumerated such well-known northern species as *Geocichla sibirica*, *Phylloscopus borealis*, and *Motacilla melanope*.

69. *Büttikofer on a new Species of Newtonia.*

[On a probably new Species of *Newtonia* from Madagascar. By Dr. J. Büttikofer. Notes Leyden Mus. xviii. p. 199.]

Newtonia olivacea is a second species of the genus, closely allied to *N. brunneicauda*, but undoubtedly different. Two specimens in the Leyden Museum were obtained at Savary, N.E. Madagascar, by Audebert in 1878.

70. *Chapman on the Birds of Yucatan.*

[Notes on Birds observed in Yucatan. By Frank M. Chapman. Bull. Amer. Mus. Nat. Hist. viii. p. 271.]

The birds of Yucatan are already well known to science principally from collections made during the past 18 years by Dr. Gaumer, who is residing at Izamal, and the results of whose investigations have been mostly incorporated in the "Aves" of the 'Biologia Centrali-Americana.' But Mr. Chapman has done a good piece of work in putting together his field-notes on 74 species which he met with at

Chichen-Itza, in the north-central part of the peninsula, in March 1896. Mr. Chapman states that he follows the classification of the 'Biologia' "as a matter of convenience," but has altered the names there used to accord with the system of nomenclature of the Check-list of the A.O.U., and has introduced a few corrections, for which reasons are given. A new generic term, "*Agriocharis*," is proposed for the Ocellated Turkey, *Meleagris ocellata* (for which we do not see the necessity!). A useful list of the principal authorities on the birds of Yucatan is appended.

71. *Donaldson-Smith on "Unknown Africa."*

[Through Unknown African Countries—the first Expedition from Somaliland to Lake Rudolf. By A. Donaldson-Smith, M.D., F.R.G.S. Edward Arnold: London, 1897. 1 vol.]

In this volume Dr. Donaldson-Smith gives us a capital account of his adventurous journey from Somaliland to Lake Rudolf and back to the coast at Lamoo. The narrative is, moreover, rendered easy to follow by the excellent set of maps (prepared for the author by the Royal Geographical Society) that accompany it, with dates affixed to every stopping-place throughout the journey.

The birds collected during the first part of the expedition—that is, until the party were driven back to the Shebeyli by the Abyssinians—were sent home by Mr. Gillett, and a good account of them has been given by Dr. Sharpe before the Zoological Society*. We suppose that the collection made during the subsequent journey from the Shebeyli to Lake Rudolf and thence to the coast will be worked out in America.

There are not many references to birds in the present volume, but the discovery of *Turacus donaldsoni*, Sharpe, in the high country on the Abyssinian frontier near Sheik Mohammed is recorded and an uncoloured figure is given. The new Lark from the Shebeyli (*Aldaudula somalica*) is also

* "On a Collection of Birds made by Dr. A. Donaldson-Smith during his recent Expedition in Western Somaliland." By R. Bowdler Sharpe. P Z. S. 1895, p. 457.

figured, and the abundance of birds in that district is noticed. At Bari on that river *Merops nubicus* was first met with, and *M. superciliosus* later on on the Web. On the upper Jub the forest is said to have been "fairly alive with birds." On the whole we think Dr. Donaldson-Smith might have told us a little more about our special branch of zoology.

72. *Elliot on Birds from Somaliland.*

[Catalogue of a Collection of Birds obtained by the Expedition into Somaliland. By D. G. Elliot, F.R.S.E. Field Columbian Mus. Publ. No. 17, Ornith., ser. i. no. 2.]

Mr. Elliot has shown great diligence in getting out his account of the birds met with during his recent excursion in Somaliland. The main object of his journey was to obtain a series of the larger Mammals, so that birds were of secondary importance. Nevertheless, examples of 125 species were obtained, and others were identified. Excellent field-notes are given on most of the species, and the localities of each specimen are attached. It would have been useful to have given an outline map with the route shown and the localities marked, for they cannot be found in any ordinary atlas.

Seven species in Mr. Elliot's list are characterized as new. Three of these are Larks—*Mirafra sharpii*, *Galerita pallida*, and *Ammomanes akeleyi*. *Sylvicola isabellina* is a Warbler, *Burnesia somalica* a Turdoid, and *Pachyprora bella* a Flycatcher. The most remarkable discovery is a new Kestrel, "*Cerchneis fieldi*," allied to *Tinnunculus rupicoloides* of South Africa, but "apparently very distinct."

73. *Godman and Salvin's 'Biologia Centrali-Americana.'*

[*Biologia Centrali-Americana*: or, Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. Edited by F. DuCane Godman and Osbert Salvin. (Zoology.) Parts CXXXI–CXXXIV. 4to. London: 1896–97. Published for the Editors by R. H. Porter, 7 Princes Street, Cavendish Square, W.]

We have now the pleasure of announcing the completion of the second volume of the "Aves" of the '*Biologia Centrali-Americana*,' which at the time of our last notice (see *Ibis*, 1896, p. 573) had progressed as far as the Cuculidæ.

The two parts recently issued contain pp. 545-593, which finish the account of the Cuculidæ, and contain those of the Capitonidæ, Rhamphastidæ, and Psittaci. Of the Barbets the authors recognize three Central-American species, of the Toucans 10 as occurring within their limits. Of Parrots, in the arrangement of which Count Salvadori's recently-published catalogue is followed very closely, Messrs. Godman and Salvin acknowledge 34 species as found in Central America. They reinstate *Conurus rubritorquis*, which at one time Count Salvadori had been unwilling to allow, in its place—having received numerous examples from Salvador and Nicaragua.

74. *Goeldi on the Birds of Pará.*

[Boletim do Museu Paraense de Historia Natural e Ethnographia. Vol. i. No. 4.]

Our excellent correspondent, Dr. Goeldi, sends us a copy of the fourth number of the 'Bulletin of the Pará Museum' which he has lately started. It contains several papers by the Director and his fellow-workers on various subjects connected with the fauna and flora of Lower Amazonia. Amongst these is one by Dr. Goeldi ('Contornos para a Avifauna de Pará'), in which he gives a list of the species of birds recorded by Natterer, Wallace, and Layard as occurring near Pará or on the Lower Amazon, promising further information from himself on the interesting subject on a future occasion. We are pleased to observe that adjacent to the 'Museu Paraense de Historia Natural e Ethnographia,' there are a 'Jardim Zoológico' and a 'Horto Botanico' associated under Dr. Goeldi's rule.

75. *Hartert on Subspecific and Family Names.*

[Ueber Begriff und Nomenclatur subspezifischer Formen, nebst Bemerkungen über die Nomenclatur der Familien. Von Ernst Hartert. Zool. Anz. no. 523, 1897.]

In a recent article in the 'Zool. Anzeiger' Mr. Hartert raises a discussion as to the best method of writing subspecific names, and as to the proper term to be employed for the names of families in classification. When a species is

divisible into subspecies his plan is to add "*typicus*" in its proper gender to the typical form, and take a third name for the other forms. So, for example, "*Acredula caudata typica*" would be the proper name for the northern form of the Long-tailed Tit, and *Acredula caudata rosea* for the British subspecies. Some authors have proposed to repeat the specific name in the first case and to term the typical form *Acredula caudata caudata*. This would, no doubt, delight the tautonymists, who would thus have the pleasure of calling the typical Magpie *Pica pica pica*, and the Blackbird *Merula merula merula*! But we must say that we prefer Mr. Hartert's plan of adding "*typicus*" to the original form, and this mode of dealing with the subject has already been put forward by one of the Editors of 'The Ibis' on a recent occasion *. As regards Mr. Hartert's second *crux*, where to place the authority in trinomials, we should say that it is best to omit it altogether. In well-known species it is quite unnecessary to add any authority to the generic and specific terms. Every one knows what *Acredula caudata* and *Erethacus rubecula* mean, and nothing is gained by adding "L." or "Linn." after them. It is, of course, quite incorrect, as Mr. Hartert points out, to write *Acredula caudata typica* (L.), and Selater, who is among those accused of this nefarious practice, absolutely denies that he has ever done so. If the authority is necessary it must be inserted after the specific name, sic. "*Acredula caudata* (L.) *typica*."

As regards "family" names we cannot agree with Mr. Hartert that a name can be retained for a family when the generic term from which it has been taken is discarded. If Mr. Hartert gives up *Cypselus* for *Micropus*, he must call the family "Micropodidæ" instead of "Cypselidæ." The orthodox doctrine has always been that the name of the family should be derived from the oldest and best known genus.

76. *Kingsley's Travels in West Africa.*

[Travels in West Africa, Congo Français, Corisco, and Cameroons. By Mary H. Kingsley. 8vo. London: Macmillan & Co., 1897.]

* See P. Z. S. 1896, p. 315.

We confess to be rather disappointed with Miss Kingsley's narrative of her travels in West Africa, although there is much information to be gathered out of it. But compression and a slight improvement in style would have made it much more readable. Miss Kingsley deserves great credit for her ascent of the Ogowé, and for the excellent collection of the fishes of that river which Dr. Günther has worked out for her. To birds, unfortunately, she paid little attention; at any rate, she did not collect them, "hating to have them killed anyhow." But there is a nice passage in her book on the birds of the Upper Ogowé about the Ground-Hornbill (*Bucorvus cafer*), which we beg leave to copy:—

"I notice great quantities of birds about—great Hornbills, vividly-coloured Kingfishers, and for the first time the great Vulture I have often heard of, and the skin of which I will take home before I mention even its approximate spread of wing. There are also noble white Cranes, and flocks of small black and white birds, new to me, with heavy razor-shaped bills, reminding one of the Devonian Puffin [no doubt some species of *Toccus*]. The Hornbill is perhaps the most striking in appearance. It is the size of a small or, say, a good-sized hen-Turkey. 'Gray Shirt' says the flocks, which are of eight or ten, always have the same quantity of cocks and hens, and that they live together 'white man fashion,' *i. e.* each couple keeping together. They certainly do a great deal of courting, the cock filling out his wattles on his neck, like a Turkey, and spreading out his tail with great pomp and ceremony, but very awkwardly. To see Hornbills on a bare sandbank is a solemn sight, but when they are dodging about in the hippo grass they sink ceremony and roll and waddle, looking—my man said—for snakes, and the little sandfish, which are close in under the bank, and their killing way of dropping their jaws—I should say opening their bills—when they are alarmed, is comic. I saw two or three of them in a line on a long branch, standing stretched up to their full height, their great eyes opened wide, and all with their great beaks open, evidently listening for something. Their cry is most peculiar, and can only be

mistaken for a native horn ; and although there seems little variety in it to my ear, there must be more to theirs, for they will carry on long confabulations with each other across a river, and, I believe, sit up half the night and talk scandal."

If the publishers had allowed us a map, we should have been able to discover more exactly where Miss Kingsley went in these little-known regions.

77. Martorelli on *Falco sacer* in Italy.

[Nota Ornitologica intorno ad un nuovo Esemplare di *Falcone sacro* preso nelle Vicinanze di Lucera del Socio Prof. Giacinto Martorelli. Atti Soc. Ital. Sci. Nat. xxxvi.]

Prof. Martorelli records the occurrence of an adult female specimen of *Falco sacer* in Italy, captured alive in February 1896 in a trap near Lucera.

78. Martorelli on two *Myiotherine* Birds.

[Nota Ornitologica intorno alla *Napothera pyrrhoptera*, Boje, ed alla *Myiothera epilepidota*, Temm., del Socio Prof. Giacinto Martorelli. Atti Soc. Ital. Sci. Nat. xxxvi. p. 203.]

Prof. Martorelli writes on two *Myiotherine* birds of which there are examples in the Turati Collection at Milan—*Napothera pyrrhoptera*, Bp. (*ex* Boie), and *Myiothera epilepidota*, Temm. It seems that Prof. Martorelli is not acquainted with what has been published on the subject by Salvadori, Sharpe, and Büttikofer. He thinks that *Napothera pyrrhoptera*, Boie, ought to be included in the genus *Malacopteron*, ignoring that both by Salvadori (Ucc. di Borneo, p. 234) and by Sharpe (N. L. M. vi. p. 178), quite independently, it has been attributed to the genus *Alcippe*. As to *Myiothera epilepidota*, Temm., Prof. Martorelli does not know what to do with it, and thinks fit to leave it in the genus *Myiothera*, which is synonymous with the American genus *Formicarius* (!), whilst either, according to Büttikofer (N. L. M. xvii. p. 75), it must go in the genus *Turdinulus*, or according to Sharpe (N. L. M. vi. p. 172) in the genus *Corytho-cichla*. Prof. Martorelli gives a full account of *M. epilepidota*,

ignoring the very exhaustive descriptions given by Sharpe (*l. c.*) of the *adult male* and of the *young female* of the same.

79. Nansen's 'Farthest North.'

[Fridtjof Nansen's 'Farthest North,' being the Record of a Voyage of Exploration of the Ship 'Fram,' 1893-96, and of a fifteen months' sleigh journey by Dr. Nansen and Lieut. Johansen, with an Appendix by Otto Sverdrup, Captain of the 'Fram,' about one hundred and twenty full-page and numerous text illustrations, sixteen coloured plates in facsimile from Dr. Nansen's own sketches, etched portrait, photogravures, and maps. 2 vols. Royal 8vo. A. Constable & Co.: Westminster, 1897.]

It would be foreign to our subject to go into the general contents of Dr. Nansen's attractive but somewhat bulky volumes, which are, no doubt, already familiar to most of us. But the Editors must say something about the birds which are mentioned in the second volume. It is interesting to note the species which Dr. Nansen and his companion observed during their struggle back from their point farthest north to Franz Josef's Land. On May 29th they met with their first bird in about $82^{\circ} 30'$ N.L. It was a Fulmar (*Fulmarus glacialis*). The following day a Black Guillemot (*Uria grylle*) appeared. On June 1st they "heard the angry cry of an Ivory Gull (*Pagophila eburnea*) and two of these birds were seen sailing over their heads, while the hoarse scream of another Gull, probably *Larus argentatus*, was also noticed." On June 5th more Gulls were seen and an Ivory Gull was shot, while next day ($82^{\circ} 17'$ N.L.) a Sandpiper was seen, but not obtained. By June 11th the Gulls had conspicuously increased in number, and a Little Auk (*Mergulus alle*) had been observed in a lane of water. On June 16th the first Brünnich's Guillemot (*Lomvia brünnichi*) was shot, and with a couple of Fulmars served to eke out the meagre rations of the two travellers.

On July 15th, as the explorers were at work at their kayaks, a Ross's Gull (*Rhodostethia rosea*) came flying by. It was apparently an adult bird, and a second adult, with a black ring round its neck, was observed four days afterwards. On approaching Hvidten-land, as we have already recorded

(above, p. 144), more Ross's Gulls were seen, together with Ivory Gulls, Fulmars, Kittiwakes, Little Auks, and Terns. "There was no want of animal-life here, nor of food in case of its being required." It was here, on Eva's Island, that Dr. Nansen believed that Ross's Gulls had their breeding-grounds. It was not until they reached Torup Island on August 17th that the first land-birds were met with. These were of course Snow-Buntings (*Plectrophenax nivalis*), "which fluttered from stone to stone with their cheerful twitter." When establishing themselves in their winter hut on Frederick Jackson Island, on August 29th, two Geese were seen flying south.

The party left in the 'Fram' met the first "harbinger of spring" on April 25th in the shape of a single Snow-Bunting, which took up permanent quarters in one of the sealing-boats and soon got very tame. For further details on the birds of the Far North we must refer our readers to Nansen's journal, which is full of information and well worthy of perusal.

80. Nelson on new Birds from Mexico and Guatemala.

[Preliminary Descriptions of new Birds from Mexico and Guatemala in the Collection of the United States Department of Agriculture. By E. W. Nelson. 'The Auk,' xiv. p. 42.]

During explorations conducted for five years on behalf of the Biological Survey of the U.S. Department of Agriculture, Mr. E. W. Nelson and his assistant, Mr. E. A. Goldman, have traversed Mexico from end to end and have crossed the country six times from sea to sea. In the course of their travels they have collected altogether from 4000 to 5000 specimens of birds. After comparing these with the large series contained in the National Museum at Washington, Mr. Nelson has come to the conclusion that the following species and subspecies require to be characterized as new:—*Dendrortyx oaxacæ*, *D. macrourus griseopectus*, *Colinus salvini*, *C. godmani*, *C. insignis*, *C. graysoni nigripectus*, *Cyrtonyx merriami*, *Megascops marmoratus*, *Momotus mexicanus saturatus*, *Dryobates sanctorum*, *Anrostomus ridgwayi*, *Delattria pringlei*, *Platypsaris aglaie sumichrasti*, *Empidonax bairdi*

occidentalis, *Picolaptes compressus insignis*, *Automolus pectoralis*, *Otocorys alpestris oaxacæ*, *Calocitta formosa azurea*, *Cissilopha pulchra*, *Ageleus phæniceus grandis*, *A. p. richmondi*, *A. gubernator californicus*, *Ammodramus sacannarum obscurus*, *Junco fulvescens*, *Peucaea ruficeps fusca*, *P. r. australis*, *Cardinalis cardinalis littoralis*, *Chlorospingus atriceps*, *Phænicotkraupis rubicoides affinis*, *Dendroica goldmani*, *Basilenterus flavigaster*, *Heleodytes alticolus*, *H. occidentalis*, *H. humilis rufus*, *H. capistratus nigricaudatus*, *Salpinctes obsoletus neglectus*, *Hemiura pacifica*, *Henicorhina mexicana*, *H. leucophrys capitalis*, *Catharus occidentalis fulvescens*, and *Merula tamaulipensis*.

A new genus of Wrens, *Hylorchilus*, is instituted for *Catherpes sumichrasti*, Lawrence.

81. North on the Birds of Funafuti, Ellice Islands.

[The Atoll of Funafuti, Ellice Group: its Zoology, Botany, Ethnology, and General Structure, based on Collections made by Mr. Charles Hedley, of the Australian Museum, Sydney, N.S.W. Aves from Funafuti, by A. J. North. Memoirs of the Austral. Mus. no. iii. pt. i. 1896.]

Mr. Charles Hedley, of the Australian Museum, Sydney, accompanied Prof. Sollas and his party during their recent coral-reef-boring expedition to the Atoll of Funafuti, and remained two months and a half on the island. The Trustees of the Museum now kindly send us a copy of his report, which gives full particulars of the general structure of Funafuti, of its natural products, and of its inhabitants. The birds collected by Mr. Hedley, who appears to have devoted himself mainly to the Invertebrata, were only six in number. They are specially reported upon by Mr. North, who refers them to four species, all well known in Australia. Mr. Hedley adds some interesting field-notes on the "Lakea" of the natives (*Micranous leucocapillus*) and its breeding-habits.

82. Oustalet on the Avifauna of Mauritius.

[Notice sur la Faune Ornithologique Ancienne et Moderne des Iles Mascareignes et en particulier de l'Île Maurice, d'après des documents inédits. Par M. E. Oustalet. Ann. d. Sci. Nat. sér. 7, iii. p. 1.]

The results of the examination of the MSS. of the cele-

brated traveller Philibert Commerson, and of Julien Desjardins, entrusted to Dr. Oustalet by M. Milne-Edwards, have led to the production of this excellent memoir, in which is summed up all that we know at present of the birds of Mauritius, both now existing and recently extinct, and much information about the birds of the other Mascarene Islands.

After a full account of Commerson, his life and adventures and MSS., Dr. Oustalet gives us a list of the most remarkable birds of the Mascarene group, including all those hitherto known from Mauritius, and dissertations on each of them. Altogether, 89 species are enumerated and commented upon.

83. *Quelch on Migratory Birds in British Guiana.*

[Migratory Birds in British Guiana. By J. J. Quelch, B.Sc. (Lond.), C.M.Z.S. 'Timehri,' new ser. vol. x. p. 258 (1896).]

Mr. Quelch devotes 20 pages of 'Timehri' to an excellent article on the migratory birds of British Guiana, to which he has paid special attention. After alluding to cases of local migration, he passes to "migratory birds proper" which come south every year to avoid the northern winter, and among these particularly to the Grallæ, great flights of which make their appearance in British Guiana at the end of August and the beginning of September. There, as in England, the shooting-season begins on September the 1st, the five previous months having been declared by law to be a close season throughout the colony. About that time multitudes of Golden Plovers (*Charadrius virginicus*), Turnstones, Ring-Plovers (*Ægialitis*), Yellowshawks, Curlews, Sandpipers, and Sanderlings make their appearance and become the prey of the active gunner. Mr. Quelch passes these species in review one by one, and points out their chief peculiarities, begging at the same time for sets of specimens of them for the Georgetown Museum.

84. *Reichenow on the Birds of Togoland.*

[Zur Vogelfauna von Togo. Dritter Nachtrag, mit einer Übersicht der

bis jetzt aus dem Togogebiet bekannten Arten. Von Prof. Dr. Ant. Reichenow. J. f. O. 1897, p. 1.]

Togoland, a name hardly to be found except in our most recent maps of Africa, is a German colony on the West-African coast that has lately received much active attention from exploring naturalists. In 1891-92 Dr. Reichenow published a series of articles upon the birds collected there by Dr. Büttner, and enumerated 133 species as belonging to its avifauna. Since then Herr Baumann, Lieutenant Klose, and Graf Zech have been active in supplementing Dr. Büttner's researches, and Dr. Reichenow is now able to increase the known number of the birds of Togoland to 279. These are all mentioned in the present catalogue, and references, field-notes, and other remarks are added. Two coloured plates contain figures of the principal novelties of the Togoland ornis:—*Centrococcyx mehowi*, *Trachylæmus togoensis*, *Phyllostrephus baumanni*, and *Crateropus reinwardti*.

85. *Sclater, W. L.—List of South-African Birds.*

[List of the Birds of South Africa. Capetown, 1896. 8 pp.]

Mr. W. L. Sclater has printed, for the use of the South-African Museum (which is now in progress of re-arrangement), a list of the names of the birds of South Africa, according to the order of the British Museum Catalogue. References are added to Sharpe and Layard's 'Handbook of South-African Birds,' of which, however, the nomenclature is in many cases changed.

Mr. W. L. Sclater's List contains the names of no less than 775 species as hitherto recorded from Africa south of the Zambesi.

86. *Sharpe's 'Handbook to the Birds of Great Britain.'*

[Allen's Naturalist's Library. Edited by R. Bowdler Sharpe, LL.D., F.L.S., &c. A Handbook to the Birds of Great Britain. By R. Bowdler Sharpe, LL.D., Assistant Keeper, Sub-Department of Vertebrata, Zoological Department, British Museum. Vol. IV. London: W. H. Allen & Co., 1897.]

The fourth volume of Dr. Bowdler Sharpe's 'Handbook'

contains an account of the Lariformes, Procellariiformes, Colymbiformes, Podicipediformes, Ralliformes, Columbigiformes, and Galliformes, according to his system of nomenclature, and concludes the work. An Appendix gives some additions to the three previous volumes. There are 35 coloured plates to illustrate these Orders.

In his preface to the present volume, Dr. Sharpe takes the opportunity of replying to his critics on the subject of nomenclature, and prophesies that the writers in scientific journals (among whom we suppose he includes the Editors of 'The Ibis') "will be found adopting *his* nomenclature in the near future"! To this we can only answer, "Wait and we shall see!" But he does not attempt to reply to the chief fault we find with his names—that is, the unnecessary multiplication of generic terms. In our remarks on the previous volume (*Ibis*, 1896, p. 418) we have called attention to this point, and it is not necessary to repeat them on the present occasion.

87. *Shufeldt on some Fossil Bones of Birds.*

[Fossil Bones of Birds and Mammals from Grotto Pietro Tamponi and Grive-St. Alban. By R. W. Shufeldt, M.D. Proc. Ac. Nat. Sci. Philad. 1896, p. 507.]

Dr. Shufeldt gives an account of a collection of fossil bones of birds and mammals belonging to Mr. John Eyer-
man, obtained partly from the Grotto Pietro Tamponi, in Sardinia, and partly from the upper division of the Miocene beds of Grive-St. Alban, Isère, France, and refers some of them to described species, whilst others are left undetermined. But on a tibio-tarsus and tarsus from the former locality he proposes to base a new species of Shearwater (*Puffinus eyermanni*), and on a nearly complete upper portion of a right tibio-tarsus from Grive-St. Alban a new *Tantalus*, to be called *T. milne-edwardsi*.

88. *Stirling and Zietz on Genyornis newtoni.*

[Preliminary Notes on *Genyornis newtoni*, a new Genus and Species of Fossil Struthious Bird found at Lake Callabonna, South Australia.

By E. C. Stirling, M.D., F.R.S. and A. H. C. Zietz, F.L.S. Trans. R. Soc. S. Australia, xx. p. 171.]

We have already given an account of the main results arrived at by the authors of this preliminary memoir (see 'Ibis,' 1897, p. 135). Since then Dr. Stirling has paid us a visit in this country, and has exhibited some most interesting specimens of the remains of *Genyornis* at a Meeting of the Zoological Society (see P. Z. S. 1897, p. 266). A set of these bones are now deposited in the British Museum.

89. *Tegetmeier on Pheasants.*

[Pheasants: their Natural History and Practical Management. By W. B. Tegetmeier. Third edition, enlarged. Illustrated from life by Messrs. J. G. Millais, T. W. Wood, P. Smit, and F. W. Frohawk, &c. 8vo. London: Horace Cox, 1897.]

The success of Mr. Tegetmeier's little volume on Pheasants and their management is sufficiently evident from a *third* edition having been called for. The first portion of this work is of a practical nature, and after a chapter on the natural history of Pheasants, their habits, food, structure, introduction, and distribution, gives full particulars as to their management in preserves and in confinement. Excellent instructions, derived from the best authorities, are added concerning breeding Pheasants, and especially as to the mode of treatment of the young birds.

The second portion of the treatise gives an account of the species of Pheasants most adapted for the covert and for the aviary. In the former category, besides the Common Pheasant of Western Europe, Mr. Tegetmeier includes *Phasianus principalis* of Afghanistan, *P. torquatus* of China, *P. versicolor* and *P. sammerringi* of Japan, and *P. reevesi* of Manchuria. Excellent illustrations are given of all these species. Six Pheasants are described as specially adapted for the aviary, and figured in an equally correct style, and we believe that the number of this list might have been further extended if necessary.

We can sincerely commend 'Pheasants: their Natural History and Practical Management,' to all students and admirers of these splendid birds.

90. *Tschusi zu Schmidhoffen on the Birds of Austria-Hungary.*

[Ornithologische Collectaneen aus Österreich-Ungarn und dem Occupationsgebiete. Von Viet. Ritter v. Tschusi zu Schmidhoffen. Ornith. Jahrb. viii. p. 24.]

Ritter v. Tschusi zu Schmidhoffen is always active in the ornithological field of Austria and Hungary. He now gives us notices of various occurrences of the rarer species. A nest of *Nucifraga caryocatactes pachyrhynchus* was obtained in the Kremsthal, in Carinthia, last year, and a Flamingo (*Phænicopterus roseus*) was captured alive near Olmütz, in Moravia.

XXXVI.—*Obituary.*—Heer A. A. VAN BEMMELEN,
Sir EDWARD NEWTON, and Mr. A. D. BARTLETT.

ADRIAAN ANTHONY VAN BEMMELEN, lately Director of the Zoological Gardens, Rotterdam, was born Nov. 3rd, 1831, at Almelo, in Holland, and was educated at Leiden. From his youth upwards he was always fond of natural history, and at the age of seventeen commenced to attend the academical lessons in zoology, botany, and anatomy at Leiden, and to work at the collections in the Zoological Museum, where Temminck was then Director, and Schlegel, Herklots, Snellen van Vollenhoven, and Finsch were members of the staff. With all these zoologists he was on excellent terms, and on the 1st of July, 1859, was named a Second-class Assistant at the Museum, and in 1865 promoted to be First-class Assistant. In this position he remained until the year 1866, when he was selected to be Director of the Rotterdam Zoological Gardens, succeeding there the famous lion-tamer Martin. Ever since the accession of Van Bemmelen the Rotterdam Gardens, notwithstanding many difficulties that had to be surmounted, have constantly progressed in a favourable direction. The collection of living animals has considerably

increased, and the accommodation provided for housing them has been greatly improved. Among the most important new houses may be mentioned the large aviary for Waders and Gulls, the Small-birds' House, and a fine new house for the large Carnivora. The botanical collection has also been considerably increased, and many fine glasshouses have been erected under Van Bemmelen's directorship.

Van Bemmelen was an excellent field-naturalist, and many were the specimens which he collected in the neighbourhood of Leiden to enrich the Native-Fauna Collection of the Museum. The results of his observations were mostly published in Dutch scientific periodicals, especially in the '*Bouwstoffen van een Fauna van Nederland*,' where he gave, among other contributions, lists of the fishes, mammals, and reptiles of the Netherlands. He also wrote many interesting articles on the birds of his native country, on the migration of insects, and on the animals that had lived in the Rotterdam Zoological Gardens. Dr. Finsch, at the end of the preface to his celebrated monograph of the Parrots, writes:—

“Zum Schluss möge mir mein lieber Freund und früherer College am Leidener Reichs-Museum, Herr A. A. van Bemmelen, gestatten ihm den aufrichtigsten Dank öffentlich auszusprechen, für die wichtigen Aufschlüsse über einzelne Arten und Exemplare des Leidener Museums.”

Van Bemmelen died suddenly on the 8th January, 1897. His successor as Director of the Rotterdam Zoological Gardens is Dr. J. Büttikofer, lately Assistant at the Leiden Zoological Museum, and well known to many of us.

SIR EDWARD NEWTON, M.A., K.C.M.G., F.L.S., C.M.Z.S.—By the death of Sir Edward Newton the British Ornithologists' Union has lost another of its founders and original Members, one of the eight who formulated the idea of the Union and of '*The Ibis*,' and who combined to make the original twenty, to which number the B.O.U. was for some time strictly limited. Edward, the youngest son of William Newton, Esq., formerly M.P. for Ipswich, was born at his father's seat, Elveden Hall, Norfolk, on the 10th of

Nov., 1832, and died at Lowestoft on the 25th of April last. Very early in life he developed his innate love for ornithology, stimulated doubtless by the example and companionship of his elder brother Alfred, and at the age of 12 years penned his first published paper on the subject, which appeared in the 'Zoologist' for 1845 (p. 1024), showing that at that early age he knew his Yarrell, and also his Bewick and Montagu. Delicate health as a boy necessitated his education being conducted chiefly at home, a circumstance most fortunate for the development of his zoological tastes. For several years after his first essay he continued to contribute notes to the 'Zoologist,' chiefly on the arrivals of migrants and on nidification at Elveden and elsewhere, and was becoming an adept at discovering birds'-nests. This power he obtained by close observation of the habits of the different species, and no warrener could surpass him in the way in which, by watching the birds, he could find their nests or make them show him where their nests were. This he did as a true naturalist, for the love of watching his favourites and learning their ways, much more than with the object of taking their eggs. The writer well remembers, when, in later years, during a walk with him, Sir Edward suddenly turned round and stood still. On being asked what was the matter, he replied, "Do you not see that Stonechat in the bush ahead? She has a nest, and we will find it. Do not face her." He stood sideways for some minutes, but never lost sight of the bird, and presently walked on straight to the spot, where, at once, he showed the nest with eggs. He was the best field-naturalist the writer ever knew, as regards the actions and movements of any bird. It seemed to be with him a sort of instinct.

Newton proceeded in due course to Magdalene College, Cambridge, where he graduated B.A. in 1857, all the while extending his knowledge, especially of the inhabitants of the marshes accessible from Cambridge. The next year he visited the paternal estates in the West Indies, and was in the island of St. Croix from 4th March to 28th Sept., 1858. The results of this visit are recorded in a series of four

admirable papers in 'The Ibis' (vol. i. 1859), written in conjunction with his brother, Prof. A. Newton, papers which bespeak the true naturalist in their every line, and which we can only wish were followed by writers who seem to think nothing further is needed than a diagnosis of the species and its dimensions.

In 1859 Newton entered the Colonial Service, being appointed Assistant Colonial Secretary of Mauritius. The avifauna of the Mascarene Islands was then scarcely known in Europe, and had remained neglected since the days of Buffon. Keen anticipations were entertained by his brother naturalists that Edward Newton, if he might not resuscitate the Dodo, would at least throw some light on its history, and they were not disappointed. His official career was as follows:—Auditor-General of Mauritius 1863; Colonial Secretary of Mauritius 1868–77; Lieut.-Governor and Colonial Secretary of Jamaica 1877–83. He several times administered the Government both of Mauritius and Jamaica. He became C.M.G. in 1875, and K.C.M.G. in 1887.

During his long residence in Mauritius Newton made several distant expeditions. His first was to Round Island, of which he gave an interesting account in 'The Ibis' (1861, p. 180). In Sept. 1861 he was sent on an official visit to King Radama of Madagascar to congratulate him on his accession, being the first Englishman to enter Antananarivo for many years. The ornithological results of this expedition were recorded in 'The Ibis' for 1862, pp. 94 & 265. In the autumn of the following year (1863) he paid a second visit to Madagascar, not officially, but solely for the purpose of ornithology, of which the history will be found in 'The Ibis' (1863), pp. 333 *et seqq.*, 452 *et seqq.* In Nov. 1864 he made an expedition to Rodriguez, which yielded rich results, as recorded by him in 'The Ibis' (1865, p. 116), 'Reports' of the British Association (1865, p. 92), and 'Philosophical Transactions' (Transit volume, 1869). In the spring of 1867 he visited the Seychelles, where he discovered a number of new and unsuspected species, which he described in P. Z. S.

1867, pp. 344, 821, and 'The Ibis,' 1867, pp. 335 *et seqq.* Though he never had an opportunity of visiting Anjuan or any of the Comoros, yet he contributed largely to our knowledge of their avifaunas by inducing Mr. Bewsher to visit them and collect. His notes on them will be found in P. Z. S. 1877, p. 295.

To summarize his work while officially resident in Mauritius, not fewer than 27 new species of living birds were brought to our knowledge by him from the Mascarene Islands, Madagascar, and the Comoros; but he was wholly indifferent as to who described them, so long as this was properly done. No less than 10 of these were from the Seychelles. Fifteen of his discoveries were named by his brother, Dr. Hartlaub, and others. In his Presidential Address to the Norfolk Naturalists' Society (1888), Sir Edward gave an admirable popular summary of the avifauna of the Mascarenes, with picturesque descriptions of the extinct species, so far as can be ascertained, and vivid sketches of the physical character of the islands. The address is replete with warnings that like causes are bringing about, though in a slower degree, like results in our own island, and he points out how the danger may possibly be averted. It is much to be regretted that this address has not been republished in some more permanent form.

In Jamaica his official duties were incessant and harassing, while his health, already severely tried in Mauritius, began to be seriously affected by the climate. He had little or no time for researches, and could but rarely leave his post. Nevertheless he did what he could. He made an almost complete collection of the birds of the island, and the "List of the Birds of Jamaica," published in the 'Handbook of Jamaica,' 1881, p. 103, adds not a little to the standard work of Gosse.

Newton's investigations of the extinct fauna of the Mascarenes claim special notice. It is not easy to state precisely what we owe him in the way of discovery of extinct species. To his care and encouragement was largely owing the success of Mr. Clarke in the original researches in the Mare aux Songes, where the great find of Dodo-remains was effected.

There were several species from Rodriguez described by Milne-Edwards, and again by Newton and Dr. Günther in the Transit volume of the Phil. Trans., and by Newton and Gadow in an article on the remains discovered in Mauritius by Sauzier (Trans. Z. S. xiii. p. 281, 1893). Newton was certainly the first to recognize among the bones from the Mare aux Songes those of *Aphanapteryx*, which he instantly referred to the bird just previously described by Frauentfeld from the old Vienna picture.

For the last five years his health was perceptibly declining. Yet, though always more or less of an invalid, his interest in the pursuits of his more vigorous days never flagged, as witness the paper last referred to. The unselfish modesty which marked all his natural-history work was equally conspicuous in his daily life. His whole nature was the very opposite of self-asserting. There was a delightful charm in the simplicity and genuineness of the man, which won the hearts of all who knew him well; and looking back on a friendship of forty years, the writer can but feel it to have been a high privilege to have known one in whose character were blended all the qualities that go to make the careful, truthful naturalist, and the refined Christian gentleman.

ABRAHAM DEE BARTLETT, the well-known Superintendent of the Gardens of the Zoological Society, London, died at his official residence in the Regent's Park on the 7th of May last, at the age of nearly 85 years. The late Mr. Bartlett was born in London on the 27th of October, 1812, the second son of John and Jane Bartlett, and was brought up in his father's trade as a bird-stuffer and dealer in natural-history specimens. As regards birds, Bartlett soon became a master of his art, and through the greater period of his life was engaged by his friends and correspondents when choice specimens, or such as wanted special care and attention, were to be mounted. He was also possessed of a very accurate knowledge of British birds, and often supplied Vigors, Yarrell, Gould, and other authorities of that period with specimens and information. As early as 1839 Bartlett brought before the Zoological Society his discovery of a new British species

of Goose—the Pink-footed Goose—then quite unknown to British naturalists, although it subsequently turned out to have been previously described on the Continent. He became likewise well known for his life-sized model of the Dodo, which was exhibited in the Great Exhibition of 1851. About 1853, when the Crystal Palace was moved from Hyde Park to Sydenham, Bartlett was appointed Superintendent of the Natural History Division of the new institution. After a short period of office there, he was selected, in the autumn of 1859, to fill a vacancy in the office of Superintendent of the Zoological Society's Gardens, and continued in the efficient performance of his duties until his death. In his practical knowledge of living animals, and as regards the best mode of treating them in confinement, Bartlett was, perhaps, unrivalled. No one knew better than he whether an animal was sound or sick, or was a more accurate judge of its value when offered for sale.

He was also an excellent and careful observer of the habits and structure of the animals under his charge, and from time to time read many valuable papers at the Meetings of the Zoological Society upon these subjects. Altogether upwards of 30 papers from Bartlett's pen on birds alone will be found in the 'Proceedings' of the Zoological Society from 1839 to 1887, besides many more relating to other branches of the Animal Kingdom. Amongst those relating to birds, we may call attention to the following as being perhaps of special interest:—

On a new British Species of the Genus *Anser* (*Anser phœnicopus*).

P. Z. S. 1839, p. 2.

Description of a new Species of *Fuligula* (*Fuligula ferinoides*). P. Z. S.

1847, p. 48.

On the Genus *Apteryx*. P. Z. S. 1850, p. 274.

On some Bones of *Didus*. P. Z. S. 1851, p. 280.

Indications of the Existence of a Second Species of Emeu (*Dromæus*).

P. Z. S. 1859, p. 205.

Notes on the Reproduction of the Australian Wattle-bird (*Talegalla lathamii*) in the Society's Gardens. P. Z. S. 1860, p. 426.

On the Affinities of *Baleniceps*. P. Z. S. 1861, p. 131.

Note on the Habits and Affinities of the Kagu (*Rhinocetus jubatus*).

P. Z. S. 1862, p. 218.

- Remarks upon the Breeding of the Rufous Tinamou (*Rhynchotis rufescens*) in the Society's Menagerie. P. Z. S. 1867, p. 687.
- On the Incubation of the Apteryx. P. Z. S. 1868, p. 329.
- Remarks upon the Habits of the Hornbills (*Buceros*). P. Z. S. 1869, p. 142.
- Remarks upon the Habits and Change of Plumage of Humboldt's Penguin. P. Z. S. 1879, p. 6.
- Remarks upon the Habits of the Darter (*Plotus ankinga*). P. Z. S. 1881, p. 247.
- Remarks upon the Moulting of the Great Bird of Paradise. P. Z. S. 1887, p. 392.

Bartlett left behind him two sons, both of whom inherit their father's tastes and follow similar pursuits. Mr. Edward Bartlett, well known from his collecting-expeditions in South America and elsewhere, has just returned to England, after a lengthened service as Curator of Rajah Brooke's Museum at Kuching, Sarawak, Borneo. Mr. Clarence Bartlett was for twenty-four years Assistant-Superintendent of the Zoological Society's Gardens, and has now succeeded to his father's post.

We have also to announce, with much regret, the recent death of another Member of the British Ornithologists' Union—Mr. Charles Bygrave Wharton. We hope to give a notice of this gentleman in our next number.

XXXVII.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed "to the Editors of 'The Ibis'":—

SIRS,—A cruise in the Levant for six weeks does not afford many opportunities for observing and noting ornithological facts, but the following notes may possibly interest some students of migration.

On the 16th of this month (March) we struck camp and started at daybreak to ride down the little-known pass from Bethel to Jericho. Just after sunrise, on the brow of the ridge, which looks down 3600 feet into the Jordan Valley, we observed a flock of White Storks circling and wheeling

close overhead. They may have been 400 or 500 in number. After thus taking a survey of the land, in a few minutes they suddenly started off in a long line to the north. The only other migrants we observed during our ride in any great numbers were small flocks of the Continental White Wagtail leisurely working their way to the north, alighting on each hillside as they traversed deep wadys which intercepted their course.

In the evening, when standing on the mounds of old Jericho, commanding a magnificent view of the Dead Sea and Jordan Valley, we noticed a long black line, apparently level with the crest of the Gilcad range opposite, stretching as far as the eye could reach, which was at least 60 miles from south to north. By our field-glasses we at once saw that this line was composed entirely of White Storks. There must have been tens of thousands, for they were nearly an hour in passing us and appeared to be closely packed. It was most interesting to watch every now and then one, two, three, or four birds drop singly out of the mass and rapidly descend to the ground. These evidently were the travellers whose summer home was near the wayside stations of the journey. A pair of these flew right across the valley and settled on a little hill behind us, being the occupants of the ruined castle above. Most, however, appeared to strike off to the eastward, where, in Bashan and Gilcad, they breed abundantly.

When at Ephesus, a fortnight before, I had noticed the remains of Stork-nests upon the top of every column and ruin, and our guide remarked that they would be back in a fortnight.

I was struck by remarking in Mr. Gray-Hill's book on the Beduin that he, too, had noticed a similar phenomenon on the 16th of March, 1887.

It was near the full moon that evening, and turning out to gaze at that wondrous black sky and see a molten silver disc below it, I noticed a moving black cloud passing between the moon and myself. The cloud seemed one solid mass, but under the glass resolved itself into serried masses of birds

steering northward in perfect silence ; at least nothing was audible, and they were at too great an elevation for the swish of their wings to be detected. I fancy they must have been Starlings.

Early next morning I mounted my horse and rode about among the, to me, familiar thickets, where, in years gone by, I had reaped a rich ornithological harvest. My old friends, the habitual denizens of this tropical oasis, were there, as of yore, but not a migrant could I see. There were Bulbuls, Cisticoles, Bush-Babblers, and Snipes in abundance, but not a Turtle-Dove, Quail, or Shrike could I detect. After a long day by the Dead-Sea shore, I returned, an hour and a half before sunset, to our camp. Every step of my horse put up one or two Quails, which dropped, evidently utterly exhausted, after a flight of three or four yards. Every bush held two or three of *Emberiza caesia* ; the Great Grey Shrike was sitting solemnly on a bare twig, with a commanding outlook, as though he had never stirred since I left the spot three years ago ; while the common Turtle-Dove absolutely swarmed in countless numbers on the ground and trees alike. Now all these birds must have arrived during the course of the day, for they could not have escaped me in the morning, and several of them (such as the Quail and the Bunting) do not remain to breed in the valley, but nest in the uplands.

There can be no doubt, as I have before remarked, that this narrow gorge of the Jordan Valley is one of the great arterial migration-routes from East and Central Africa to Eastern Europe and Western Asia.

Many years ago I described in your pages the migrations of Swallows and other birds by this route. It would seem as though the caravans of migrants muster at the great lakes, and then from the valley of the Nile cross the low-lying narrow flat to Akabah, where, uniting with those which have skirted the Red-Sea shore, they follow up the Akabah, the Jordan Valley, and the Orontes Valley to the Taurid range, where, about the head-waters of the Euphrates, they disperse east and west to their summer-quarters.

So far as I can learn, the migrants down the Nile diverge eastward on arriving at the Delta, and in the upper valley of the Euphrates I have noticed vast flocks arriving from the southward.

Yours, &c.,

Jerusalem, March 31st, 1897.

H. B. TRISTRAM.

[Most of our readers will be aware that at the date of the despatch of this letter our much-valued friend and correspondent had recently met with a sad accident, his leg having been broken by the kick of a mule. We are much pleased to be able to announce, however, that Canon Tristram has made a good recovery and is now at home again.—EDD.]

SIRS,—It is with some surprise that, on referring to Professor Newton's 'Dictionary of Birds' (Introduction, p. 2), I find that there still seems to be need of a report by an ornithologist with regard to the species of two of the Geese in the celebrated fresco found in a tomb at Maydoom. I therefore send you the following brief remarks.

For the benefit of those who may have forgotten the history of the picture, I quote the following from the Catalogue of the Museum at Ghizch, Cairo, where the picture is numbered 3 in the collection:—

"3. *Prisé et stuc*. Haut. 0^m,29, long. 1^m,74. Cat. Mar. p. 205.—*Meïdoun*.

"Oies paissant, très jolie fresque pleine de vie et de gaieté. Cette scène et le hiéroglyphe peint qu'on voit plus haut proviennent d'un tombeau de Meïdoun que Mariette jugeait antérieur à l'époque des grandes pyramides."

Mariette assigns to the IVth dynasty, by whom these pyramids were built, the dates of 4235 to 3951 B.C., so that, according to him, the picture of the Geese must be at least older than that date. Other Egyptologists differ from Mariette, and assign to the IVth dynasty a period either about 1000 years before or after that given by him; but, in any case, the picture must date at least from a period of some 3000 years before the Christian era.

According to Professor Newton (*op. cit.* p. 2, footnote), "a *fac-simile* of the picture is, or was, a few years ago, exhibited at the Museum of Science and Art in London, and the portion containing the figures of the Geese has been figured by Mr. Loftie ('Ride in Egypt,' p. 209)," to whom Professor Newton was indebted for the opportunity of examining a copy made on the spot by an accomplished artist.

There are six Geese in the picture, and, as Professor Newton states, "Four of these figures can be unhesitatingly referred to two species (*Anser erythropus* and *A. ruficollis*) well known at the present day; and if the two remaining figures, belonging to a third and larger species, were re-examined by an expert, they would very possibly be capable of determination with no less certainty."

These two larger Geese are placed one at each end of the series in the picture, and I made a careful examination of them during a recent visit to the Ghizeh Museum, especially as Professor Newton had been good enough to write and remind me about them, stating that he thought that the specific points had been neglected by the copyist who made the *fac-simile* which he saw in London some years ago.

These two Geese have their bills yellow, tipped and shaded with a darker colour. That on the left of the picture has the lower mandible heavily tipped with black, while that on the right has no such dark tip, but has the upper mandible slightly tipped with brown, as are also the bills of the two specimens of *A. erythropus*. All the four Grey Geese have the bills and legs of the same colour—yellow—and the claws black.

The shoulders of the two larger Geese are of the same *brown* colour as the rest of their bodies, and are similar to those of the two *A. erythropus*. The only parts of the plumage which are coloured darker than the rest are the primaries.

The artist evidently recognized clearly the presence of the dark bars on the underside of *A. erythropus*, and also the white forehead, and has brought out these characteristics well in the painting, as he has also in the case of the clearly-

marked plumage of *A. ruficollis*; but I do not think that he was aware of the existence of such smaller specific differences as the colour of the nail of the bill; in fact the *brown* tip which he has given to the bills of his two specimens of *A. erythropus* seems to prove this. I fancy that he only meant to portray a "*Grey Goose*," without reference to species, which he probably did not know how to distinguish.

At all events, the colours of the bills and shoulders of the two larger Geese absolutely preclude us from identifying them with either the Grey-Lag or the Pink-footed species, so that if they are to be referred to any species in particular, that species must be the Bean (*A. segetum*), and with this species the larger size of the bills of the two figures in the picture seems to agree.

They are, however, to my mind, very poor representations of *A. segetum*, and rather resemble the nondescript kind of Geese which may be seen frequently in farmyards in Egypt.

My opinion is that either the artist did not know of the characters which distinguish the various species of Grey Goose among themselves (with the exception of the White-fronted species), or else his intention was to depict both wild and tame Geese together—a course of procedure which would, I think, be quite in keeping with the methods of the artists who produced the beautiful series of animal-drawings on the Tomb of Thi, at Sakkârah, which are said to date from about B.C. 3500. The latter drawings show conclusively, I think, that the Egyptians of those early times had both tame Geese and tame Ducks.

Yours &c.,

GERALD E. H. BARRETT-HAMILTON.

S.S. 'Victoria,' Indian Ocean.

April 27th, 1897.

The Collection of Birds'-eggs in the British Museum.—The great collection of birds'-eggs in the British Museum, which was arranged under the direction of Seebohm shortly before his death, contains about 48,000 specimens, and is, no doubt, by far the most extensive collection of these objects in

existence. It is contained in 35 cabinets, with about 24 drawers in each cabinet, and follows the systematic order of the Bird Catalogue. In it are comprised, besides the old collection, the large collections of Gould, Hume, Salvin and Godman, and Seebohm. It is thus rich in Indian, Palæ-arctic, Australian, and Central-American eggs, but comparatively poor in South-American and African forms. A Handbook of General Oology, based upon this splendid series, would be a most valuable work, and will, we trust, shortly be undertaken. Nothing of the sort has been published since the appearance of Des Murs's 'Traité Général d'Oologie Ornithologique' in 1860.

The late Wilh. Hollandt's Collection of Birds'-eggs.—The extensive collection of birds'-eggs formed by the late Wilhelm Hollandt has been bequeathed, as we learn from a communication made by Dr. Wilhelm Blasius to the Verein für Naturwissenschaft zu Braunschweig, to the Ducal Museum of Brunswick. It contains 10,162 specimens, referred to 2710 species, and embraces examples of the eggs of 103 families out of the 116 acknowledged by G. R. Gray in his Hand-list, according to which it was arranged and catalogued by its late owner.

The Gütke Collection of Birds.—The Gütke Collection of Birds and Eggs and the Library annexed are now, as Dr. Clemens Hartlaub kindly informs us, the property of the Prussian State, and have been placed under the control of the Royal Biological Institution in Heligoland. It is expected that they will be removed into the new museum in Heligoland in the course of the present summer and rendered accessible to the public. The specimens of birds, some of which were in a very bad condition, are being carefully examined and repaired by an experienced taxidermist. New additions continue to be made to the series, amongst which are a melanistic variety of *Alauda tartarica* and examples of the Spoonbill and of *Puffinus major*.

The Museum of Pará.—In the April number of the 'Zoologische Garten,' Herr Meerwarth, assistant in the Museu Paraense (of which our excellent correspondent, Dr. Emil Goeldi, is Director), gives an account of the new Zoological Garden attached to the Museum, and adds a description of the principal buildings and a list of the species of vertebrates of which examples are exhibited. The birds consist of 224 individuals, belonging to 70 species, mostly Amazonian forms. Among these are specimens of *Harpyia destructor* and *Eurypygia helias*, and of three species of *Psophia*.

*The Tristram Collection of Birds**.—By far the most important event in the history of the Liverpool Collections during the past year has been the acquisition of the Tristram Collection of Birds. This is an historical collection, long recognized among ornithologists as one of the first importance. It was, if not the last, almost the last, of the great undispersed private collections which were amassed by wealthy cultivators of this science in England during the past half-century or more, nearly every one of which has now become incorporated in the National Museum of Natural History at South Kensington, either by gift or by purchase. No such general collections are now being made. Ornithologists, as a rule, now restrict themselves—owing to the magnitude of the subject—to collecting and studying the birds of one, or even part of one, region, or the species of a single family, or of a few families at most. One of the earliest and most important of such general collections was brought together at Knowsley by the 14th Lord Derby, who, by bequeathing it to the City of Liverpool, laid the foundation of the present Museum.

This new acquisition was formed by Henry Baker Tristram, D.D., LL.D., F.R.S., Canon of Durham Cathedral, its foundation dating from the year 1844, when, an undergraduate, he began to collect British and European birds. Having, soon after that year, accepted an official post in

* Extracted from the Forty-fourth Annual Report of the Committee of the Public Libraries, Museums, and Art Gallery of the City of Liverpool for the year ending 31st December, 1896.

Bermuda, he devoted his leisure to collecting the birds of the West Indian Islands.

Visits to North America followed, which resulted in large additions of the avifauna of that region being amassed. As is widely known, Canon Tristram has, at various periods of his life, paid extended visits to Palestine and Syria, as well as to the countries of Northern Africa on the Mediterranean Littoral, to the Sahara Desert, the Canary Islands, and to Madeira, for the purpose of increasing his collection. Accordingly the birds of all these regions are well represented in it. In every case the birds described and figured in his various works, in 'The Ibis,' and in the 'Proceedings' of the Zoological Society of London, were retained in his own cabinet, and these types add much to the intrinsic as well as to the historical interest of his collection.

During a visit paid at a later period to Japan, Dr. Tristram obtained a large series of rare and interesting species of Eastern Palæarctic birds, and on his way through America he lost no opportunity of acquiring species from that region still desiderata in his cabinets. Besides his personal contributions to his collection, Dr. Tristram has maintained, throughout his life, an extensive correspondence with naturalists, travellers, missionaries, consuls, and officers of Her Majesty's Army and Navy in most quarters of the globe, many of whom he was the means of inspiring with some of his own love of ornithology, inducing them to collect and investigate the bird-life of many little-visited regions and send home the fruits of their investigations. Through these agents, by exchange, purchase, or gift, the Tristram Museum obtained annually large accessions. Special attention was given by the Canon to the birds of the Oceanic Islands, chiefly of the Pacific and Indian Oceans, and the collection, which is specially rich in this department, has been, as he himself has remarked, "most valuable in the study of types under changed conditions, and especially in isolation." There are, in the collection, specimens of a number of species now extinct, and so rare that but very few museums anywhere possess examples. Of these may be mentioned the Labrador Duck (*Camptolæmus labradoricus*),

the Norfolk-Island Parrot (*Nestor productus*), and the Rarotongan Flycatcher (*Monarcha dimidiata*) ; besides a number of bones of the Great Auk (*Alca impennis*).

The Tristram Collection is poorer in South-American birds than in those of any other region. In the birds of that region, however, the famous collection of the 14th Earl of Derby, presented to the Museum in 1851, is singularly rich, so that the two collections supplement each other in a most unexpected manner, and it will be found that the entire collection of birds belonging to the Corporation, when the general catalogue, now in progress, has been completed, is second only to that in the British Museum. What the number of species and specimens in the Derby Collection may be it is impossible, as yet, to say, as no catalogue at all approaching completeness exists ; but it is well known to contain a very large number of specimens of, perhaps, even greater historical interest than the Tristram Collection, as they were obtained in the great voyages of the end of the last century. So far as the catalogue has progressed, there are indications that a number of untraced types and historical specimens will be found to have been buried in the Derby cabinets.

Restored Skeleton of Æpyornis.—Amongst the numerous objects of scientific interest at the Royal Society's Convezazione on May 19th was a restored skeleton of the *Æpyornis hildebrandti* of Burckhardt, put together in the British Museum from the numerous bones of this form recently obtained by Dr. C. I. Forsyth Major at Sirabé, in Madagascar. This is the first skeleton of the *Æpyornithidæ* articulated, and is nearly complete. It stands about 62 inches (= 158 cm.) in height.

Movements of Ornithologists and Collectors at home and abroad.—Mr. E. W. Oates has quitted Burmah for England, and will shortly take up his permanent residence in or near London. We are much pleased to be able to rank our friend again among the ornithologists of the metropolis. There is an ample field at home for the exercise of his abilities and powers of work.

Mr. J. E. S. Moore has returned home from his expedition to Lake Tanganyika, and is now busily engaged in working out the results. Among his collections is a small series of birds, but his attention was principally directed to the lacustrine fauna. Mr. Moore gave an account of his general zoological results at the Meeting of the Zoological Society on the 4th of May last, and exhibited a very interesting series of his specimens at the Royal Society's Soirée on May 19th.

Mr. Alexander Whyte, F.Z.S., has come home from Nyasaland to enjoy a well-earned rest upon retiring from the service of the British Central-African Administration. His extensive collections from the Nyika plateau, in North Nyasa, are being worked out at the British Museum, and we hope soon to be able to give our readers an account of the birds, which Capt. Shelley is now engaged upon. Another collection, obtained by Mr. Whyte from the mountain-district north of Zomba, has also recently arrived, and further collections are on their way home.

Mr. and Mrs. Lort Phillips carried out another very successful expedition to the hills of Somaliland last winter, and brought back a fine series of birds, of which we hope to be able to give an account in a future issue. As will be seen by our report of the proceedings of the B.O.C. (above, p. 448), examples of several new species were obtained. Mr. and Mrs. Lort Phillips have now left England again for their summer-quarters in Norway.

Mr. Joseph J. S. Whitaker returned to Palermo at the beginning of May from a short, but not unsuccessful, ornithological raid into Tunisia, only regretting that he could not remain longer in the country. Among the nests taken were those of *Saxicola mæsta*, *S. leucura*, *Emberiza saharae*, *Erythrospiza githaginea*, and *Otis houbara*. Mr. Whitaker took three nests of *Saxicola mæsta*, with eggs in them, with his own hands. He discovered a place where *Chersophilus duponti* is comparatively abundant, and hopes to obtain its eggs on another occasion.

Mr. Robert L. Perkins has now finally returned to England from the Sandwich Islands, where, as our readers know, he

has been engaged for some years in the investigation of the strange zoology of that group. We earnestly hope that he may have further contributions to offer us on the history and habits of the Hawaiian birds. His recent collections from the islands of Kauai, Hawaii, Oahu, and Maui number about 230 skins, of which the first set, according to the arrangement made by the joint Committee of the Royal Society and British Association, will go to the British Museum and the second to Cambridge.

At the date of his last letter (Jan. 24th, 1897), Mr. J. Graham Kerr was still at "Waikthlatingmayalma," in the Chaco Boreal of Paraguay, and, although successful in his pursuit of *Lepidosiren paradoxa*, was unhappy at the poverty of mammals and birds. Of the latter he had met with examples of about 100 species, of the former of only two or three! There had been rain, heavy and continuous, for three weeks, and the surrounding country was nearly all under water.

Mr. Charles W. Andrews, of the Geological Department of the Natural History Museum, has received leave of absence from his duties in order to undertake, on behalf of Dr. John Murray, F.R.S., a complete investigation of the Fauna and Flora of Christmas Island, which lies in the Indian Ocean in about 11° S. lat., off Java. Mr. Andrews has left England for Batavia, whence a vessel will be provided to take the exploring party to its destination.

Two good collectors are hard at work in British East Africa, and will, no doubt, do much to work up the details of its rich and varied fauna. Mr. F. J. Jackson, who has already made such splendid collections of birds in East Africa, is now Resident at Ravine Station, at the edge of the Mau plateau. Dr. Hinde, who is stationed at Machako's, about 300 miles from the coast, has already sent several collections of birds to the British Museum.

Mr. Stanley Flower (Lieut. 5th Fusiliers), who has lately taken up an appointment as Curator of the Royal Museum at Bangkok, has been making a collecting-expedition up the rivers to the east of Bangkok, and sends home most lively accounts of his adventures among the natives and wild animals. Mr. Flower pays special attention to mammals

and reptiles, but does not neglect birds, and will doubtless eventually add much to our knowledge of the still imperfectly-known avifauna of Siam.

Mr. G. E. H. Barrett-Hamilton left England again in April last to resume his duties as one of the Naturalists on the English Commission for the investigation of the "Sealeries" of the North Pacific, concerning the proceedings of which during last year a Parliamentary Blue-book has lately been issued. He went first to Egypt, as will be seen by the letter addressed to us given on p. 484. Proceeding eastward, he expected to be at Yokohama on May 30th, to join Professor D'Arcy Thompson, and to arrive at the Kommandorski Islands about the middle of June. Mr. Barrett-Hamilton will not, we trust, forget to observe and collect birds.

Our friends Mr. Henry J. Pearson and Colonel Feilden, accompanied by Dr. Curtis, left England on June 1st to join the yacht 'Laura' at Bergen. This vessel, which has been strengthened and fitted for Arctic service, has been chartered by Mr. Pearson for an ornithological excursion to Barents Sea. The programme of the party is to visit Nova Zembla and the island of Waygats, and to explore the Great Tundra of the Samoyeds from the Ural Mountains westward to the Petshora River. The benevolent protection of the Imperial Russian Government has been accorded to the Expedition, at the request of our Foreign Office and on the recommendation of the Royal Geographical Society. We have no doubt that an abundant harvest will be reaped.

In China our correspondents, Mr. F. W. Styan, Mr. J. D. de La Touche, and Mr. C. B. Rickett, continue to take every opportunity of extending our knowledge of the native avifauna. Mr. Styan sends us, through Mr. Ogilvie Grant, a most interesting narrative of an expedition into the Fohkien Hills undertaken by our three ornithological brethren in December last, prepared for a local journal. A short paper containing the principal results arrived at on this occasion has been also received and will appear in our next number.

The North-east African Hoopoe.—In a recent paper on the birds collected by Dr. Muzioli in Tigré (Boll. Mus. Zool. ed Anat. Comp. Tor. vol. xii. no. 287) I have made some remarks about the Hoopoes of that region, four specimens having been in the collection. While trying to identify these birds, I was at variance with Mr. Salvin, who, in the 'Catalogue of Birds in the British Museum' (vol. xvi. p. 4), had united the North-east African bird with the European *Upupa epops*. When examining the African birds collected by Dr. Muzioli, I found them exactly like those collected in the Bogos country by Antinori (Antin. & Salvad. 'Viaggio Bogos,' p. 58), and in Shoa by the same collector and by Dr. Ragazzi (Ann. Mus. Civ. Gen. (2) i. p. 105, vi. p. 220), and differing from the European Hoopoes in several respects, especially in wanting, or having scarcely perceptible, the white sub-apical spots on the feathers of the crest, and in the smaller dimensions. The African Hoopoes I have attributed (*Il. cc.*) to *U. senegalensis*, Sw.

Dr. Muzioli, having read my remarks on his specimens, writes to me that these Hoopoes certainly belong to a species different from *U. epops*, and his reason for this positive statement is the quite peculiar call of the African birds, utterly different from that of the European Hoopoes, with which Dr. Muzioli is well acquainted: he adds that Hoopoes are very common and extremely numerous in Tigré *at every season*, so that it is quite evident that in North-east Africa there is a *resident* form of *Upupa*. Dr. Muzioli has also noticed that the African Hoopoes lack the disgusting smell of musk which is so strong in the European birds.

These divergences seem to me sufficient to establish the specific distinction of the North-east African Hoopoe, which I have hitherto called *U. senegalensis*. Whether this is its proper name I cannot say quite positively, but I am inclined to believe it. It would be interesting to ascertain how the North-African form differs from the Indian *U. indica*.—
T. SALVADORI, C.M.Z.S.

THE IBIS.

SEVENTH SERIES.

No. XII. OCTOBER 1897.

XXXVIII.—*On the Birds of Zululand, founded on the Collections made by Messrs. R. B. and J. D. S. Woodward.*—Part II.* *Systematic List of the Birds of Zululand.* By R. BOWDLER SHARPE, LL.D., Assistant-Keeper, Sub-Department of Vertebrata, British Museum.

1. MELIERAX GABAR.

Melierax gabar (Daud.); Sharpe, ed. Layard's B. S. Afr. p. 19.

An adult female, found with the nest containing young birds. The nest was in a thorn-tree on the Ivuna River, which lies beyond the Nongoma range and flows into the Black Umfolosi.

2. ACCIPITER MINULLUS.

Accipiter minullus (Daud.); Sharpe, ed. Layard's B. S. Afr. p. 23 (1875).

A young bird from Eschowe and an adult male from Ungoye; the latter killed in August 1895.

3. ASTURINULA MONOGRAMMICA.

Asturinula monogrammica (Temm.); Sharpe, t. c. p. 42. No. 37. Found in the Ubombo district.

4. BUBO LACTEUS.

Bubo lacteus (Temm.); Sharpe, t. c. p. 71. An adult from Ulandi (p. 414).

* For Part I. see *antea*, p. 400.

5. SCOPS CAPENSIS.

Scops capensis, Smith; Sharpe, t. c. p. 75.

An adult from Ulundi.

6. GLAUCIDIUM PERLATUM.

Glaucidium perlatum (Vieill.); Sharpe, Cat. B. Brit. Mus. ii. p. 209.

Carine perlata, Sharpe, ed. Layard's B. S. Afr. p. 77.

One specimen from Ulundi and another from the Black Umfolosi River (p. 414).

7. CAPRIMULGUS EUROPEUS.

Caprimulgus europæus, Linn.; Sharpe, t. c. p. 83.

A young male from Eschowe of a peculiar coloration, with the scapulars largely varied with white and the crown of the head only slightly streaked with black. On showing the bird to Mr. Hartert, however, he pronounces it to be only a variety of *C. europæus*.

8. CAPRIMULGUS PECTORALIS.

Caprimulgus pectoralis, Cuv.; Sharpe, t. c. p. 84.

An adult male from Ulundi.

9. CAPRIMULGUS FERVIDUS.

Caprimulgus fervidus, Sharpe, t. c. p. 86.

An adult bird from Eschowe.

10. MELITTOPHAGUS ALBIFRONS.

Melittophagus albifrons (Cab. & Hein.); Sharpe, Cat. B. Brit. Mus. xvii. p. 53 (1884).

Merops nubicoides, Sharpe, ed. Layard's B. S. Afr. p. 99 (1884).

A series of adult birds from Eschowe and two from the Black Umfolosi River (p. 409).

11. MELITTOPHAGUS MERIDIONALIS.

Melittophagus meridionalis, Sharpe, Cat. B. Brit. Mus. xvii. p. 45, pl. i. fig. 4 (1892).

Merops pusillus, Sharpe, ed. Layard's B. S. Afr. p. 100.

A series of old and young from Eschowe, Ulundi, and the Black Umfolosi River (p. 409).

12. CORACIAS CAUDATA.

Coracias caudata, Linn.; Sharpe, t. c. p. 104.

One specimen from Ulundi (p. 414).

13. HAPALODERMA NARINA.

Hapaloderma narina (Steph.); Sharpe, t. c. p. 106.

A series of males and females from Eschowe, and one from Ungoye, in August 1895.

14. ALCEDO SEMITORQUATA.

Alcedo semitorquata, Swains.; Sharpe, t. c. p. 107.

Two specimens from Eschowe (p. 415).

15. CORYTHORNIS CYANOSTIGMA.

Corythornis cyanostigma (Rüpp.); Sharpe, t. c. p. 108.

Two adults from Eschowe.

16. CERYLE RUDIS.

Ceryle rudis (Linn.); Sharpe, t. c. p. 110.

One male adult from the Black Umfolosi River (p. 401).

17. CERYLE MAXIMA.

Ceryle maxima (Pall.); Sharpe, t. c. p. 111.

One specimen from the Santa Lucia Lake (p. 415).

18. ISPIDINA NATALENSIS.

Ispidina natalensis (Smith); Sharpe, t. c. p. 113.

Five adults from Eschowe and a young bird from Ulundi (p. 415).

19. HALCYON ALBIVENTRIS.

Halcyon albiventris (Scop.); Sharpe, t. c. p. 115.

Old and young birds from Eschowe, Ulundi, and the Black Umfolosi River.

20. HALCYON CHELICUTENSIS.

Halcyon chelicutensis (Stanl.); Sharpe, t. c. p. 117.

One male and one female from Santa Lucia Lake (June), and one adult from Eschowe.

21. HALCYON CYANOLEUCA.

Halcyon cyanoleuca (Vicill.) ; Sharpe, t. c. p. 120.

Four adults from Ulundi and one from the Black Umfolosi River (p. 415).

22. LOPHOCEROS EPIRHINUS.

Lophoceros epirhinus (Sundev.) ; Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 408.

Tockus nasutus, Sharpe, ed. Layard's B. S. Afr. p. 133 (1875).

One immature bird from Ulundi.

23. LOPHOCEROS LEUCOMELAS.

Lophoceros leucomelas (Licht.) ; Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 414.

Tockus flavirostris, Sharpe, ed. Layard's B. S. Afr. p. 130 (1875).

Two adults from Ulundi.

24. UPUPA AFRICANA.

Upupa africana, Bechst. ; Sharpe, t. c. p. 134.

A series of old and young from Eschowe, Ulundi, and the Black Umfolosi River.

25. IRRISOR VIRIDIS.

Irrisor erythrorhynchus (nec Lath.) ; Sharpe, t. c. p. 137.

Irrisor viridis (Licht.) ; Salvin, Cat. B. Brit. Mus. xvi. p. 17.

One male and one female adult from St. Lucia Lake in June, and two adults, one in moult, from Eschowe, and one from the Black Umfolosi River.

26. RHINOPOMASTUS CYANOMELAS.

Rhinopomastus cyanomelas (Vieill.) ; Sharpe, t. c. p. 138.

A series of adult and young birds from Eschowe.

27. SCHIZORHIS CONCOLOR.

Schizorhis concolor (Smith) ; Sharpe, t. c. p. 144.

One adult bird from Ulundi.

28. *TURACUS LIVINGSTONII*.

Turacus livingstonii (Gray) ; Shelley, Cat. B. Brit. Mus. xix. p. 439.

Messrs. Woodward write to me that they have procured this species in the Ubombo district.

29. *CUCULUS CLAMOSUS*.

Cuculus clamosus, Lath. ; Sharpe, t. c. p. 150.

Two adults from Eschowe (p. 410).

30. *CHRYSOCOCCYX SMARAGDINEUS*.

Cuculus smaragdineus (Swains.) ; Sharpe, t. c. p. 151.

Four adults from Eschowe and one from the Black Umfolosi River (p. 410).

31. *CHRYSOCOCCYX CUPREUS*.

Chrysococcyx cupreus (Bodd.) ; Sharpe, t. c. p. 153.

Five adults from Eschowe, one from the Black Umfolosi River, and one young bird from Ulundi (p. 410).

32. *CHRYSOCOCCYX KLAASI*.

Cuculus klaasii, Steph. ; Sharpe, t. c. p. 155.

Chrysococcyx klaasii, Shelley, Cat. B. Brit. Mus. xix. p. 283.

Five adult birds from Eschowe, one immature from Ulundi, and one adult from the Black Umfolosi River.

33. *COCCYSTES CAFER*.

Coccytes cafer (Licht.) ; Sharpe, t. c. p. 158.

Two adult birds from Hlabisa.

34. *CEUTHMOCHARES AUSTRALIS*.

Ceuthmochares australis, Sharpe ; id. t. c. p. 161, pl. v. fig. 1.

Two adults from Hlabisa.

35. *CENTROPUS NATALENSIS*.

Centropus superciliosus (nec Hempr. & Ehr.) ; Sharpe, t. c. p. 163.

Centropus natalensis, Shelley, Cat. B. Brit. Mus. xix. p. 362.

Two adults from Hlabisa.

36. INDICATOR INDICATOR.

Indicator sparmanni, Steph.; Sharpe, t. c. p. 166.

Indicator indicator (Gm.); Shelley, Cat. B. Brit. Mus. xix. p. 5.

One adult from Ulundi and one from the Black Umfolosi River.

37. INDICATOR VARIEGATUS.

Indicator variegatus, Less.; Sharpe, t. c. p. 7.

An adult from Eschowe.

38. INDICATOR MINOR.

Indicator minor, Steph.; Sharpe, t. c. p. 169.

Three adults from Eschowe.

39. MELANOBUCCO TORQUATUS.

Pogonorrhynchus torquatus (Dumont); Sharpe, t. c. p. 172.

Melanobucco torquatus, Shelley, Cat. B. Brit. Mus. xix. p. 24.

Two adults from Eschowe and two adult females from Santa Lucia Lake, June 1895 (p. 405).

40. BARBATULA PUSILLA.

Barbatula pusilla (Dumont); Sharpe, t. c. p. 175.

Four adults from Eschowe and one adult male from Santa Lucia Lake (pp. 404, 405).

41. BARBATULA BILINEATA.

Barbatula bilineata (Sundev.); Sharpe, t. c. p. 176.

Four adults from Eschowe, and one adult female from Ungoye, August 1895 (p. 402).

42. SMILORHIS LEUCOTIS.

Smilorhis leucotis (Sundev.); Sharpe, t. c. p. 177.

No. 9. Three adults from Eschowe and three from the Lower Umfolosi River, August 1895 (pp. 402, 420).

43. TRICHOLÆMA LEUCOMELAN.

Pogonorrhynchus leucomelas (Bodd.); Sharpe, t. c. p. 173.

Tricholema leucomelan, Shelley, Cat. B. Brit. Mus. xix. p. 31.

One adult with the red frontal patch very small.

44. TRACHYPHONUS CAFER.

Trachyphonus cafer (Less.) ; Sharpe, t. c. p. 178.

No. 1. One adult from Eschowe.

45. STACTOLÆMA WOODWARDI. (See Plate X. p. 404.)

Stactolema woodwardi, Shelley, Bull. Brit. Orn. Club, v. p. iv (1895); Ibis, 1896, p. 133.

A series from Eschowe and one male from Ungoye, August 1895.

This species is very closely allied to *Stactolema olivacea*, Shelley (see 'Ibis,' 1880, p. 334, pl. vii.; B. M. C. xix. p. 49), the type of which is in the British Museum. A figure of the latter bird is introduced into the background of the Plate of *S. woodwardi**, in order that the differences between the two birds may be appreciated (p. 404).

46. CAMPOTHERA BENNETTI.

Campothera bennetti (Smith) ; Sharpe, t. c. p. 181.

One adult male from the Black Umfolosi River, and a female from the Ivuna River, which flows into the Black Umfolosi.

47. THRIPIAS NAMAQUUS.

Thripas namaquus (Licht.) ; Hargitt, Cat. B. Brit. Mus. xviii. p. 306 (1890).

Dendropicus namaquus, Sharpe, ed. Layard's B. S. Afr. p. 188.

An adult male from Hlabisa, and three adult males and one female from Eschowe.

48. DENDROPICUS CARDINALIS.

Dendropicus cardinalis (Gm.) ; Sharpe, t. c. p. 190.

One male and two females from Eschowe.

49. MESOPICUS GRISEOCEPHALUS.

Mesopicus griseocephalus (Bodd.) ; Hargitt, Cat. B. Brit. Mus. xviii. p. 371 (1890).

Dendropicus menstruus, Sharpe, t. c. p. 191.

Three males and two females adult from Eschowe.

* By an oversight, the name of *S. olivacea* (fig. 2) has been omitted from the Plate.

50. IYNX PECTORALIS.

Yunx pectoralis, Vig. ; Sharpe, t. c. p. 191.

One adult from Eschowe (p. 411).

51. PŒOCEPHALUS FUSCICAPILLUS.

Pœocephalus fuscicapillus (Verr. et Des Murs) ; Salvad. Cat. B. Brit. Mus. xx. p. 368 (1891).

Psittacus fuscicapillus, Sharpe, t. c. p. 197.

One male and five females from Santa Lucia Lake, June 1895, three adults from the Black Umfolosi River, and one from Ulundi (p. 415).

52. TURDUS LITSITSIRUPA.

Turdus litsitsirupa (Smith) ; Sharpe, t. c. p. 198.

Two adults from Eschowe and one from Ulundi. Also procured on the Ivuna River below the Nongoma range.

53. TURDUS LIBONYANUS.

Turdus libonyanus (Smith) ; Sharpe, t. c. p. 199.

A series of adult birds from Eschowe.

54. TURDUS OLIVACEUS.

Turdus olivaceus, Linn. ; Sharpe, t. c. p. 200.

One adult and one immature from Eschowe.

55. PHYLLOSTROPHUS CAPENSIS.

Phyllostrophus capensis, Swains. ; Sharpe, t. c. p. 203.

One adult from Eschowe ; one adult male from Santa Lucia Lake, June ; and one female from Ungoye, August 1895.

56. ANDROPADUS IMPORTUNUS.

Andropadus importunus (Vicill.) ; Sharpe, t. c. p. 204.

Five adults from Eschowe and one female from Ungoye, August 1895.

57. XENOCICHLA FLAVISTRIATA.

Xenocichla flavistriata, Sharpe, Cat. B. Brit. Mus. vi. p. 100 (1881).

Andropadus flavostriatus, Sharpe, ed. Layard's B. S. Afr. p. 206.

A series of adult birds from Eschowe and three males and two females from Ungoye in August 1895.

58. CHLOROCICHLA FLAVIVENTRIS.

Chlorocichla flaviventris (Smith); Sharpe, Cat. B. Brit. Mus. vi. p. 113 (1881).

Criniger flaviventris, Sharpe, ed. Layard's B. S. Afr. p. 203.

A series from Eschowe and a female from the Lower Umfolosi River, August 1895; and an adult female from Santa Lucia Lake, June 1895 (p. 402).

59. PYCNONOTUS NIGRICANS.

Pycnonotus nigricans (Vieill.) ; Sharpe, Cat. B. Brit. Mus. vi. p. 134 (1881).

Pycnonotus capensis (pt.), Sharpe, ed. Layard's B. S. Afr. p. 207.

One adult bird from Eschowe.

60. CRATEROPUS JARDINII.

Crateropus jardinii, Smith; Sharpe, t. c. 212.

Two adults from Ulundi and one from Eschowe.

61. COSSYPHA BICOLOR.

Cossypha bicolor (Sparrm.) ; Sharpe, t. c. p. 222.

A series from Eschowe.

62. COSSYPHA NATALENSIS.

Cossypha natalensis, Smith; Sharpe, t. c. p. 223.

Two adults from Eschowe and an adult male from Santa Lucia Lake, June 1895.

63. COSSYPHA CAFFRA.

Cossypha caffra (Linn.) ; Sharpe, t. c. p. 224.

No. 19. Three adults from Eschowe.

64. COSSYPHA HUMERALIS.

Cossypha humeralis (Smith) ; Sharpe, t. c. p. 228.

One adult from Eschowe and one from the Black Umfolosi River.

65. AEDONOPSIS SIGNATA.

Aedonopsis signata (Sundev.) ; Sharpe, Cat. B. Brit. Mus. vi. p. 69.

Cossypha signata, Sharpe, ed. Layard's B. S. Afr. p. 229.

Two adults from Eschowe and one adult male from Ungoye, August 1895.

66. SAXICOLA GALTONI.

Saxicola galtoni (Strickl.) ; Sharpe, t. c. p. 234.

A specimen from the Ivuna River, below the Nongoma range.

"Female. Nest in a hole in a bank. Three eggs—blue, spotted with brown."

67. PRATINCOLA TORQUATA.

Pratincola torquata (Linn.) ; Sharpe, t. c. p. 250.

One male and one female from Eschowe and one male from Santa Lucia Lake, June 1895.

68. ERYTHROPYGIA LEUCOPHRYS.

Erythropygia leucophrys (Vieill.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 74.

Aedon leucophrys, Sharpe, ed. Layard's B. S. Afr. p. 252.

No. 5. A series from Eschowe and one from Ulundi.

69. CISTICOLA SUBRUFICAPILLA.

Cisticola subruficapilla (Smith) ; Sharpe, t. c. p. 266.

No. 17. One adult from Ulundi and two from Eschowe.

70. CISTICOLA TERRESTRIS.

Cisticola terrestris (Smith) ; Sharpe, Cat. B. Brit. Mus. vii. p. 266.

A male from the Ivuna River, below the Nongoma range. "This bird inhabits open grass-land, and flies high in the air with a jerking motion, making a cracking noise with its wings, and uttering a metallic cry at the same time. It darts suddenly down to the ground, which it quits again immediately and repeats the performance."

71. CISTICOLA LUGUBRIS.

Cisticola lugubris (Rüpp.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 280.

Cisticola fulvifrons, Sharpe, ed. Layard's B. S. Afr. p. 264.

No. 14. An adult from Eschowe.

72. *CISTICOLA NATALENSIS.*

Cisticola natalensis (Smith) ; Sharpe, Cat. B. Brit. Mus. vii. p. 278.

Cisticola curvirostris (Sundev.) ; Sharpe, t. c. p. 263.

Two adult birds from Eschowe.

73. *CISTICOLA CINERASCENS.*

Cisticola cinerascens (Heugl.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 248.

An adult from Hlabisa. It is apparently in full winter plumage, and agrees with others in the collection of the British Museum. Captain Shelley agrees with me in the determination of the species, which has not been met with before to the south of Nyasaland.

74. *SPHENÆACUS NATALENSIS.*

Sphenæacus natalensis, Shelley ; Sharpe, t. c. p. 825.

An adult bird from Eschowe.

75. *SCHÆNICOLA APICALIS.*

Schænicola apicalis (Licht.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 110.

Catrisus apicalis, Sharpe, ed. Layard's B. S. Afr. p. 283.

One adult bird from Eschowe (see p. 401).

76. *ACROCEPHALUS BÆTICATUS.*

Acrocephalus bæticatus (Vieill.) ; Sharpe, t. c. p. 290.

No. 15. One adult from Eschowe.

77. *PHYLLOSCOPUS TROCHILUS.*

Phylloscopus trochilus (Linn.) ; Sharpe, t. c. p. 298.

One adult from Eschowe.

78. *EREMOMELA USTICOLLIS.*

Eremomela usticollis, Sundev. ; Sharpe, t. c. p. 298.

One adult from Ulundi.

79. *EUPRINODES FLAVIDUS.*

Euprinodes flavidus (Strickl.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 142.

Dryodromas flavida, Sharpe, ed. Layard's B. S. Afr. p. 299.

One adult female from Eschowe, and an adult male from

the Hlatikulu forest, in Zambana's territory, north of the Pongola.

80. SYLVIELLA RUFESCENS.

Sylviella rufescens (Vieill.) ; Sharpe, t. c. pp. 303, 828.

One adult from Eschowe.

81. PROMEROPS GURNEYI.

Promerops gurneyi, Verr. ; Sharpe, t. c. p. 306.

One adult from Ulundi.

82. NECTARINIA FAMOSA.

Nectarinia famosa (Linn.) ; Sharpe, t. c. p. 306.

Two immature birds from Eschowe (p. 409).

83. CINNYRIS VERREAUXI.

Cinnyris verreauxi, Smith ; Sharpe, t. c. p. 309.

One male and one female from Santa Lucia Lake, June 1895 ; and two adults from Eschowe (p. 402).

84. CINNYRIS OLIVACEUS.

Cinnyris olivaceus, Smith ; Sharpe, t. c. p. 310.

A series from Eschowe and one adult male from Santa Lucia Lake, June 1895.

85. CINNYRIS GUTTURALIS.

Cinnyris gutturalis (Linn.) ; Sharpe, t. c. p. 311.

A series of adult and immature birds from Eschowe, Ulundi, and Santa Lucia Lake.

86. CINNYRIS CHALYBÆA.

Cinnyris chalybæa (Linn.) ; Sharpe, t. c. p. 314.

Three adult males from Eschowe.

87. CINNYRIS AMETHYSTINA.

Cinnyris amethystina (Shaw) ; Sharpe, t. c. p. 315.

A series of adult and immature birds from Eschowe and one adult male from Santa Lucia Lake, June 1895 (p. 410).

88. CINNYRIS TALATALA.

Cinnyris talatala (Smith) ; Sharpe, t. c. p. 318, pl. vii.

A series of males and females, adult and immature, from Eschowe.

89. CINNYRIS MARIQUENSIS.

Cinnyris mariquensis, Smith; Sharpe, t. c. p. 319.

Four adult birds from Ulundi and two from Eschowe.

90. ANTHODIÆTA COLLARIS.

Anthodiæta collaris (Vieill.) ; Sharpe, t. c. p. 320.

Three adults from Eschowe.

91. ZOSTEROPS VIRENS.

Zosterops virens, Bp.; Sharpe, t. c. p. 325.

Two adults from Eschowe.

92. CHLOROPETA NATALENSIS.

Chloropeta natalensis, Smith; Sharpe, t. c. p. 335.

One adult from Eschowe.

93. MUSCICAPA GRISOLA.

Muscicapa grisola, Linn.; Sharpe, t. c. p. 338.

One adult from Ulundi and one from Eschowe.

94. MUSCICAPA CÆRULESCENS.

Muscicapa cærulescens (Hartl.) ; Sharpe, t. c. p. 340.

One adult from Eschowe.

95. TARSIGER STELLATUS.

Tarsiger stellatus (Vieill.) ; Sharpe, Cat. B. Brit. Mus. iv.
p. 261.

Pogonocichla stellata, Sharpe, ed. Layard's B. S. Afr.
p. 342.

Three adults from Eschowe.

96. BATIS MOLITOR.

Batis molitor (Hahn & Küster) ; Sharpe, t. c. p. 348, pl. x.
fig. 1.

One male and one female from Eschowe and one male
adult from Ulundi.

97. ALSEONAX ADUSTA.

Alseonax adusta (Boie) ; Sharpe, Cat. B. Brit. Mus. iv.
p. 129.

Muscicapa undulata (nec Gm.) ; Sharpe, ed. Layard's B.
S. Afr. p. 339.

One adult, without locality.

98. TERPSIPHONE CRISTATA.

Terpsiphone cristata (Gm.); Sharpe, t. c. p. 352.

Seven adult birds from Eschowe.

99. CRYPTOLOPHA RUFICAPILLA.

Cryptolopha ruficapilla (Sundev.); Sharpe, Cat. B. Brit. Mus. iv. p. 400.

Pindalus ruficapillus, Sharpe, ed. Layard's B. S. Afr. p. 302.

One adult from Eschowe.

100. HIRUNDO RUSTICA.

Hirundo rustica, Linn.; Sharpe, t. c. p. 362.

Two adults and three immature birds from Eschowe.

101. HIRUNDO PUELLA.

Hirundo puella, Temm.; Sharpe, t. c. p. 373.

Three adults from Eschowe.

102. LANIUS COLLARIS.

Lanius collaris, Linn.; Sharpe, t. c. p. 374.

One adult from Eschowe.

103. ENNEOCTONUS COLLURIO.

Enneoctonus collurio (Linn.); Sharpe, t. c. p. 378.

Two adult males and one female from Eschowe; one female and a partial albino from Ulundi.

104. UROLESTES MELANOLEUCUS.

Urolestes melanoleucus, Smith; Sharpe, t. c. p. 380.

Three adults from Ulundi, and one adult and one immature from the Black Umfolosi River.

105. LANIARIUS QUADRICOLOR.

Laniarius quadricolor, Cass.; Sharpe, t. c. p. 381, pl. xi.

A series of males and females, adult and young, from Eschowe, Lower Black Umfolosi River, August 1895, and Santa Lucia Lake in June of the same year (p. 408).

106. LANIARIUS OLIVACEUS.

Laniarius olivaceus, Shaw; Sharpe, t. c. p. 382.

Two adults from Eschowe and one male from the Lower Umfolosi River, August 1895.

107. LANIARIUS RUBIGINOSUS.

Laniarius rubiginosus, Sundev. ; Sharpe, t. c. p. 383.

One adult from Eschowe and one male from the Lower Umfolosi River, August 1895.

108. LANIARIUS SULPHUREIPECTUS.

Laniarius sulphureipectus, Less. ; Sharpe, t. c. p. 384.

A series from Eschowe, two adult females from Santa Lucia Lake, June 1895, and one female from the Lower Umfolosi River, August 1895.

109. LANIARIUS POLIOCEPHALUS.

Laniarius poliocephalus, Licht. ; Sharpe, t. c. p. 387.

One adult from Eschowe and one from the Lower Black Umfolosi River.

110. NICATOR GULARIS.

Laniarius gularis, Finsch & Hartl. ; Sharpe, t. c. p. 390.

An adult from the Ivuna River, below the Nongoma range. This greatly extends the range of the species, which was hitherto known only from the Zambesi.

111. DRYOSCOPIUS CUBLA.

Laniarius cubla, Lath. ; Sharpe, t. c. p. 392.

Six adults from Eschowe and one female adult from Ungoye, August 1895.

112. TELEPHONUS SENEGALUS.

Laniarius senegalus (Linn.) ; Sharpe, t. c. p. 394.

One adult from Eschowe.

113. DRYOSCOPIUS RUFIVENTRIS.

Dryoscopus rufiventris (Swains.) ; Gadow, Cat. B. Brit. Mus. viii. p. 134.

Laniarius ferrugineus, Sundev. ; Sharpe, ed. Layard's B. S. Afr. p. 393.

One immature from Eschowe.

114. NILAUS CAPENSIS.

Nilaus capensis (Shaw) ; Gadow, Cat. B. Brit. Mus. viii. p. 168.

Nilaus brubru (Lath.) ; Sharpe, t. c. p. 397.

A series of adult and immature specimens from Ulundi.

115. *CAMPOPHAGA NIGRA*.

Campophaga nigra, Vieill. ; Sharpe, t. c. p. 398.

No. 21. A series of males and females from Eschowe, one male from Ungoye, August 1895 ; and one female from Santa Lucia Lake, June 1895.

116. *CAMPOPHAGA HARTLAUBI*.

Campophaga hartlaubi, Salvad. ; Sharpe, t. c. p. 398.

Two males adult from Eschowe, one male from the Lower Umfolosi River, August 1895, and one female from Ulundi.

117. *GRAUCALUS CÆSIUS*.

Graucalus cæsius, Licht. ; Sharpe, t. c. p. 399.

Two adults from Eschowe.

118. *BRADYORNIS OATESI*.

Bradyornis oatesi, Sharpe ; id. ed. Layard's B. S. Afr. p. 402.

Two specimens from the Ivuna River, below the Non-goma range. This is an extension of the range of the species to the southward.

119. *BRADYORNIS SILENS*.

Bradyornis silens, Shaw ; Sharpe, t. c. p. 404.

No. 3. One adult from Eschowe and one from Hlabisa.

120. *PRIONOPS TALACOMA*.

Prionops talacoma, Smith ; Sharpe, t. c. p. 406.

Four adults from Eschowe, one from Ulundi, and two females from Santa Lucia Lake, June 1895.

121. *BUCHANGA ASSIMILIS*.

Buchanga assimilis, Bechst. ; Sharpe, t. c. p. 408.

One adult from Eschowe.

122. *DICRURUS LUDWIGII*.

Dicrurus ludwigii, Smith ; Sharpe, t. c. p. 410.

No. 20. A series of adult birds from Eschowe.

123. *ORIOLOUS LARVATUS*.

Oriolus larvatus, Licht. ; Sharpe, t. c. p. 413.

A series of adult and immature birds from Eschowe, and two immature females from Ungoye, August 1895.

124. *DILOPHUS CARUNCULATUS.*

Dilophus carunculatus (Gm.) ; Sharpe, t. c. p. 421.

To a specimen from the Ivuna River Messrs. Woodward attach a note:—"This Starling is common and differs from the wattled form in having a white rump and no wattles. Male and female the same."

The bird which I have described in the 'Catalogue of Birds' as the adult female has the white rump strongly developed, whereas in the male the rump is only a little paler cream-colour than the back. Young birds seem invariably to have a considerable amount of white on the rump, and, to judge from the series in the British Museum, it seems probable that the species has a winter plumage, but this can be determined only by naturalists on the spot.

125. *BUPHAGA AFRICANA.*

Buphaga africana, Linn. ; Sharpe, t. c. p. 418.

Two adults from the Black Umfolosi River.

126. *BUPHAGA ERYTHORHYNCHA.*

Buphaga erythrorhyncha, Stanl. ; Sharpe, t. c. p. 420.

Four adults from Eschowe and one from the Black Umfolosi River (p. 416).

127. *LAMPROCOLIUS PHENICOPTERUS.*

Lamprocolius phenicopterus, Swains. ; Sharpe, t. c. p. 425.

Six adult and immature birds from Eschowe and one from the Black Umfolosi River (p. 405).

128. *LAMPROCOLIUS MELANOGASTER.*

Lamprocolius melanogaster, Swains. ; Sharpe, t. c. p. 428.

Three adults and one young from Eschowe (p. 405).

129. *PHOLIDAUGES VERREAUXII.*

Pholidauges verreauxii, Bocage ; Sharpe, t. c. p. 428.

A series of old and young from Eschowe and two from the Black Umfolosi River.

130. *PENTHETRIA ARDENS.*

Vidua ardens (Bodd) ; Sharpe, t. c. p. 455.

Penthetria ardens, Sharpe, Cat. B. Brit. Mus. xiii. p. 215 (1890).

A series of old and young specimens from Eschowe (p. 410).

131. PENTHETRIA ALBONOTATA.

Penthetria albonotata (Cass.) ; Sharpe, t. c. p. 460.

Two adult birds from the Ivuna River, below the Non-goma range.

132. SYCOBROTUS BICOLOR.

Sycobrotus bicolor, Vieill. ; Sharpe, t. c. p. 432.

A series of adult birds from Eschowe.

133. SITAGRA OCULARIA.

Hyphanturgus ocularius, Smith ; Sharpe, t. c. p. 435.

Sitagra ocularia, Sharpe, Cat. B. Brit. Mus. xiii. p. 427 (1890).

A series of males and females from Eschowe.

134. HYPHANTORNIS SPILONOTUS.

Hyphantornis spilonotus, Vig. ; Sharpe, t. c. p. 437 ; id. Cat. B. xiii. p. 468 (1890).

Six adult males and one female from Eschowe.

135. HYPHANTORNIS CABANISI.

Hyphantornis cabanisi, Peters ; Sharpe, t. c. p. 442 ; id. Cat. B. Brit. Mus. xiii. p. 461 (1890).

Two adult males and one female from Eschowe.

136. AMBLYOSPIZA ALBIFRONS (Vig.).

Amblyospiza albifrons (Vig.) ; Sharpe, t. c. p. 449.

One male from the Lower Umfolosi River, August 1895, and three immature birds from Eschowe.

137. STEGANURA PARADISEA.

Steganura paradisea (Linn.) ; Sharpe, Cat. B. Brit. Mus. xiii. p. 211.

Vidua verreauxii, Cass. ; Sharpe, ed. Layard's B. S. Afr. p. 452.

A series of adult males and two females from Eschowe, and two adult males from the Black Umfolosi River.

138. VIDUA PRINCIPALIS.

Vidua principalis (Linn.) ; Sharpe, t. c. p. 453.

Three adult and immature males from Eschowe.

139. HYPOCHÆRA FUNEREA.

Hypochæra funerea (De Tarrag.) ; Sharpe, Cat. B. Brit. Mus. xiii. p. 310 (1890).

Three adults from Eschowe.

140. PYROMELANA ORYX.

Pyromelana oryx (Linn.) ; Sharpe, t. c. p. 462.

Two males and two females from Ulundi.

141. ZONOGASTRIS MELBA.

Pytelia melba (Linn.) ; Sharpe, t. c. p. 468.

Zonogastris melba, Sharpe, Cat. Brit. B. Mus. xiii. p. 296.

Two adults from Eschowe.

142. LAGONOSTICTA INCANA.

Estrela incana, Sundev. ; Sharpe, t. c. p. 470.

Lagonosticta incana, Sharpe, Cat. B. Brit. Mus. xiii. p. 284.

One adult from Eschowe (p. 411).

143. ESTRILDA ANGOLENSIS.

Uræginthus cyanogaster (Daud.) ; Sharpe, t. c. p. 473.

Estrilda angolensis, Sharpe, Cat. B. Brit. Mus. xiii. p. 402.

Four adults from Eschowe.

144. LAGONOSTICTA RUBRICATA.

Lagonosticta rubricata (Licht.) ; Sharpe, t. c. p. 475 ; id. Cat. B. Brit. Mus. xiii. p. 281.

One adult from the Black Umfolosi River.

145. PASSER DIFFUSUS.

Passer diffusus, Smith ; Sharpe, t. c. p. 480.

Two adults from Eschowe.

146. PETRONIA PETRONELLA.

Petronia petronella (Licht.) ; Sharpe, t. c. p. 481.

One adult and three young from Eschowe.

147. *SERINUS ICTERUS.**Crithagra ictera* (Vieill.) ; Sharpe, t. c. p. 484.*Serinus icterus*, Sharpe, Cat. B. Brit. Mus. xii. p. 356.

Three adults from Eschowe (p. 411).

148. *SERINUS SULPHURATUS.**Crithagra sulphurata* (Linn.) ; Sharpe, t. c. p. 486.*Serinus sulphuratus*, Sharpe, Cat. B. Brit. Mus. xii.

p. 352.

Two adults from Eschowe.

149. *FRINGILLARIA TAHAPISI.**Fringillaria tahapisi* (Smith) ; Sharpe, t. c. p. 490.

Four adults from Eschowe.

150. *EMBERIZA FLAVIVENTRIS.**Fringillaria flaviventris* (Vieill.) ; Sharpe, t. c. p. 491.*Emberiza flaviventris*, Sharpe, Cat. B. Brit. Mus. xii.

p. 499.

Four adults from Eschowe.

151. *MIRAFRA AFRICANA.**Mirafra africana*, Smith ; Sharpe, t. c. p. 519.

Three adults from Eschowe, one from the Black Umfolosi River, and one from Ulundi.

152. *MIRAFRA SABOTA.**Mirafra sabota*, Smith ; Sharpe, t. c. p. 526.

One adult from Ulundi and one from the Black Umfolosi River.

153. *MIRAFRA NIGRICANS.**Mirafra nigricans*, Sundev. ; Sharpe, t. c. p. 530.

One adult from Ulundi.

154. *MACRONYX CAPENSIS.**Macronyx capensis* (Linn.) ; Sharpe, t. c. p. 530.

Two adults from Eschowe.

155. *MACRONYX CROCEUS.**Macronyx croceus* (Vieill.) ; Sharpe, Cat. B. Brit. Mus.

x. p. 626.

Macronyx striolatus, Heugl. ; Sharpe, ed. Layard's B. S. Afr. p. 532.

Six adults from Eschowe (p. 411).

156. *ANTHUS BRACHYURUS*.

Anthus brachyurus, Sundev. ; Sharpe, t. c. p. 539.

Three adult birds from Eschowe.

157. *ANTHUS LINEIVENTRIS*.

Anthus lineiventris, Sundev. ; Sharpe, t. c. p. 540.

Two adults from Eschowe and one from the Ivuna River, below the Nongoma range.

158. *ANTHUS RUFULUS*.

Anthus caffer, Sundev. ; Sharpe, ed. Layard's B. S. Afr. p. 534.

Anthus rufulus, Vieill. ; Sharpe, Cat. B. Brit. Mus. x. p. 574.

One adult female from Santa Lucia Lake, June 1895.

159. *MOTACILLA LONGICAUDA*.

Motacilla longicauda, Rüpp. ; Sharpe, t. c. p. 544.

One adult from Eschowe.

160. *COLIUS ERYTHROMELON*.

Colius erythromelon, Vieill. ; Sharpe, t. c. p. 551.

Two adults from Hlabisa and five from Ulundi.

161. *COLIUS STRIATUS*.

Colius striatus, Gm. ; Sharpe, t. c. p. 555.

One adult and one young from Hlabisa, two adults from Ulundi, and one from Eschowe.

162. *HAPLOPELIA LARVATA*.

Haplopelia larvata (Temm.) ; Sharpe, t. c. p. 564.

One adult and one young from Eschowe.

163. *TURTUR SENEGALENSIS*.

Turtur senegalensis, Linn. ; Sharpe, t. c. p. 568.

Three adults from Eschowe.

164. *CHALCOPELIA AFRA*.

Chalcopelia afra (Linn.) ; Sharpe, t. c. p. 570.

One young bird from Eschowe.

165. *ÆNA CAPENSIS*.

Æna capensis, Linn.; Sharpe, t. c. p. 572.

Two males and one female from Ulundi, one male from Eschowe, and one male and one female from the Black Umfolosi River (p. 409).

166. *GUTTERA EDOUARDI*.

Guttera edouardi, Hartl.; Ogilvie Grant, Cat. B. Brit. Mus. xxii. p. 382.

Numida verreauxi, Elliot; Sharpe, t. c. p. 585.

Messrs. Woodward send a male of a Crested Guinea-fowl from the Hlatikulu forest, Zambana's territory, north of the Pongola. The collectors were inclined to believe that this was a different bird from the Crested Guinea-fowls mentioned in my edition of 'Layard.' This is due to the very inaccurate rendering by Prof. Elliot of the soft parts of the head and throat, which are described as being "blue on the sides and back of the neck and bright red on the throat, extending from the base of the lower mandible to the feathers of the breast." In dried skins there is a reddish appearance on these parts, which Mr. Elliot seems to have taken as indicating that in life the parts are vivid, but Messrs. Woodward remark:—"There are no bright colours on the head, neck, and throat." The omission, too, of all mention in Mr. Elliot's description (copied by me) of the creamy-buff margins to the outer secondaries also deprives the species of one of its striking characters. "Its cry is different from that of the other species, and is more musical. Iris carmine."

167. *LIMNOCORAX FLAVIROSTRIS*.

Limnocrax flavirostris (Licht.); Sharpe, t. c. p. 618.

One adult from Eschowe (p. 401).

168. *PARRA AFRICANA*.

Parra africana, Gm.; Sharpe, t. c. p. 648.

One adult male from Santa Lucia Lake, June 1895.

169. *ÆDICNEMUS VERMICULATUS*.

Ædicnemus vermiculatus, Cab.; Sharpe, t. c. p. 647.

A specimen from the Ivuna River, south of the Nongoma range.

170. CURSORIUS CHALCOPTERUS.

Cursorius chalcopterus, Temm.; Sharpe, t. c. p. 656.

One adult from Ulundi.

171. TRINGOIDES HYPOLEUCUS.

Tringoides hypoleucus (Linn.); Sharpe, t. c. p. 686.

One adult from Ulundi.

172. BUTORIDES ATRICAPILLUS.

Butorides atricapillus (Afzel.); Sharpe, t. c. p. 719.

One specimen from the Ivuna River, south of the Non-goma range.

173. PODICIPES CAPENSIS.

Podiceps minor (nec Linn.); Sharpe, t. c. p. 787.

Podicipes capensis, Salvad. Ann. Mus. Civic. Genov. (2) i. p. 236 (1884).

One male adult from Santa Lucia Lake, June 1895.

In addition to the above list of species, of which specimens have been forwarded to England by Messrs. Woodward, there are the following mentioned by them in their introductory paper (*anteà*, pp. 400–422) as having been observed by them during their travels:—

Serpentarius secretarius (p. 419).
Bubo capensis (p. 406).
Asio capensis (p. 406).
Strix flammea (p. 407).
Chera progne (p. 410).
Serinus canicollis (p. 411).
Corvus albicollis (p. 412).
 — *capensis* (p. 412).
Pholidauges verreauxi (p. 413).
Amydrus morio (p. 406).
Turacus corythaix (p. 403).
Cuculus solitarius (p. 410).
Pœocephalus robustus (p. 404).

Buceros buccinator (p. 421).
Bucorvus abyssinicus (p. 422).
Turtur vinaceus (p. 409).
 — *semitorquatus* (p. 409).
Herodias alba (p. 420).
Geronticus hagedash (p. 403).
Scopus umbretta (p. 415).
Francolinus natalensis (p. 416).
 — *subtorquatus* (p. 417).
Otis kori (p. 418).
 — *afra* (p. 419).
Ædicnemus capensis (p. 419).

In the Shelley collection in the British Museum there is also a specimen of *Scotopelia peli*, collected by Mr. Goodge in Zululand, and thus the number of species recorded from this part of Africa is 199.

XXXIX.—*On the Birds collected by Mr. Alexander Whyte, F.Z.S., during his Expedition to the Nyika Plateau in North Nyasaland.* By Captain G. E. SHELLEY, F.Z.S. *With an Introduction by P. L. SCLATER.*

(Plates XI. & XII.)

I. INTRODUCTION. (By P. L. SCLATER.)

THE collections of birds from the Protectorate of Nyasaland previously described in this journal have all been formed in the country south of Lake Nyasa, mostly in the district called the "Shiré Highlands," of which a chart has been given in 'The Ibis' for 1894, p. 462. Sir Harry Johnston, shortly before he left Zomba in 1896, arranged that Mr. Whyte should make an expedition into the high district called the Nyika Plateau, situated some 300 miles further north, on the west coast of the north portion of Lake Nyasa, to ascertain how far the fauna and flora of this part of the Protectorate corresponded with those of the southern portion. This expedition was successfully carried out by Mr. Whyte in May, June, and July, 1896, and the collection of birds now described by Capt. Shelley was formed on that occasion. Mr. Whyte has published an account of his journey in several articles in the 'British Central Africa Gazette' (from Oct. 15th, 1896, to March 15th, 1897), from which I extract the following particulars:—

Mr. Whyte left Zomba on May 14th, 1896, taking with him his two hunters, Abdallah and Suleiman, two intelligent natives (Atongas), and three personal servants, all of whom could act as hunters and skimmers if required. He descended to the Shiré at Mpimbi, and thence proceeded up the river in the 'Dove' to Fort Johnston, which he found much improved since his last visit, many new buildings having been erected and the avenues of trees having made great progress. At noon on May 26th the party transhipped into the 'Pioneer,' and had a pleasant run to Monkey Bay, where collecting was begun, and Sea-Eagles (*Haliaëtus vocifer*) were found nesting on an island at the mouth of the harbour. Next day Kota-Kota was reached in the evening. Here there

was excellent waterfowl shooting (Ducks, Geese, and Teal) on the low swampy shores of the peninsula, and hippos. were numerous. After a rough run, Nkata Bay (about $11^{\circ} 50'$ S. lat.) was reached on the 22nd, and Ruarwe, some 40 miles further north, on the following day. At Ruarwe the 'Pioneer' left the party, as it had been planned to ascend the plateau from this station. But difficulties about portage rendered it necessary to proceed along the coast to Pasilao, where fresh men were obtained, and subsequently to Florence Bay, the port of the Mission-station of Kondowe, just under Mount Waller. At Kondowe a most hearty reception from Dr. Laws and his companions was met with, and an excellent basis established for penetrating into the interior.

From Kondowe two days of stiff climbing brought Mr. Whyte and his companions to the highest range at the south end of the Nyika Mountains. Here good collections of plants and birds were made, but the men suffered from cold and other complaints. Travelling to the north-west, Mr. Whyte visited the native villages Mayawa and Khala, but, finding difficulties about guides, finally determined to descend to the coast, and to push on along the plains to Karonga, the northernmost station of the Protectorate on the Lake, so as to try to penetrate the range again from that end. The arid, sandy plain now traversed was covered with stunted acacias, euphorbias, and short grass, among which numbers of bushbucks and hartebeests were seen, as also the spoor of larger antelopes. The party passed through the native villages of Machifrantu, Pamali, and Kapembi. At the last place there is a school belonging to Dr. Kerr Cross's Mission. On arriving at Karonga, Mr. Whyte took up his quarters with Mr. Taylor, the Collector of the North Nyasa district, whose house was three miles further north, on the Kambwe Lagoon near a small well-sheltered bay.

After a few days' rest at Karonga, Mr. Whyte started again for the hills on June 19th, leaving the collections already made under Mr. Taylor's care, and at 10 A.M. reached Mpata, the site of the stockade of the slaver Mlozi, captured

and burnt by Sir Harry Johnston six months previously. Here he diverged from the regular Karonga-Tanganyika route towards the south and entered the hills, reaching Chifungu's in the evening. The hills now became higher and only sparsely clad, and much spoor of large and small antelopes was seen. The next village was Chasari's, on the banks of a dried-up stream. This was the last inhabited spot, and the way was continued by an elephant-path to an encampment under a shady grove of bamboos on the banks of the Wyie River. Here some interesting birds were collected, and amongst others a bright little Kingfisher, "resembling *Ceyx tridactyla* of India." From "Bamboo Camp" the Wyie River was followed for some time, after which severe climbing brought the party to a spot on one of the spurs of the mountains immediately under the Mpanda peak, where it was resolved to stop, Mr. Taylor being knocked up by fever. The view from this spot was very grand, majestic mountain scenery catching the eye in all directions, whilst on one side the silvery expanse of Lake Nyasa showed up splendidly in the sunrise. The next morning was fine, and, after 500 more feet of steep climbing, the plateau of the grand Nyika Range was reached at noon. Mr. Whyte describes his position as follows :—

"At the spot where we first reached the plateau of the Nyika Mountains it was quite narrow, some 500 yards from east to west, a sort of saddle immediately to the south of the Mpanda peak. The descent on the west side was less steep than on the east, the one we had climbed, and the view extended over deep wooded valleys and grasslands, backed in the distance by the Angoni Mountains and plateau. The lichen-covered granite peak, towering some 600 feet above us, resembled a blunt sugar-loaf, and not a forked or double wedge-shaped mountain, as seen from the plains.

"What struck me as most remarkable was the sudden change in the climate and flora. Hitherto we had not found it disagreeably cold, and until we reached the plateau there was little or no sign of an Alpine flora with the exception of a few *helichrysums* and other temperate-zone *Compositæ*.

At our last camp, about 1000 feet below us, and which we could now look down on, the temperature stood at 72° Fahr. in the shade at noon; here it stood at 60° Fahr., with a sharp north-east wind blowing."

Travelling along the plateau in quest of water and collecting the Alpine plants, Mr. Whyte discovered a small spring in a ravine, and on the 24th of June camped here (Camp No. I.) after five days' march from Karonga. The spot, however, proved to be cold and damp, and after three days' sojourn Mr. Whyte moved about five miles further on into a sheltered little vale furnished with wood and water, where he resolved to establish himself more permanently (Camp No. II.). Huts were built for the men, and the tent was pitched in their centre, so that all were protected from the dense mist, mizzling rain, and cold winds, which usually prevailed here until 9 A.M.

After settling here, all hands were told off as collectors, and an amusing description is given by Mr. Whyte of the various modes in which they were employed in gathering together the natural objects of every description. The display of wild flowers on these heights was most gorgeous. It was a perfect paradise for the botanist, new plants cropping up in all directions.

On June 27th the highest point of the range, which was named "Centre Peak," was ascended, and found to consist of two confused heaps of lichen-covered granite blocks. Its height was calculated at nearly 8000 feet above the sea-level. Near the summit Mr. Whyte captured an example of a new mole-rat (*Georhynchus whytei*, Thomas).

The prominent feature of this high mountain district was the abundance of rodents and other small mammals. Of these Mr. Thomas has already described the principal novelties in a communication to the Zoological Society on the 4th of May last*, and will give a complete account later on. Birds were also numerous and of interest, as will be seen by Capt. Shelley's report on them. Mr. Whyte specially mentions a large Crested Hawk-Eagle (*Spizaetus coronatus*) with

* See P. Z. S. 1897, p. 430.

a spread of wings of almost six feet, two Francolins (*Franco-linus johnstoni* and *F. shelleyi*) found in the short grass of the plateau, a Raven (*Corvultur albicollis*), and twelve Passeres new to him, as having been met with here during the sixteen days of his stay, after which he returned to Mr. Taylor's bungalow near Karonga.

After a short rest here, Mr. Whyte started on July 17th, in company with Dr. Kerr Cross, for an expedition into the Tanganyika Plateau, the object being to examine the little-known Masuku Range, which extends from that plateau near Fort Hill towards Lake Nyasa. The same road was taken as on the former expedition as far as Mpata, whence the old Stevenson road was followed to Mwanyesia's village near the entrance to the pass. Hence an early start was made for the stiff climb up the plateau along the much-frequented route to Tanganyika, and the stockaded village of Mwiniwanda was reached at 4 P.M. This was a miserable place surrounded by swamps, and the travellers were glad to push on to Chirenji, formerly one of the Livingstonia mission-stations, but now abandoned on account of its unhealthiness. Three hours beyond, on the plateau, is the strong and well-appointed station of Fort Hill, belonging to the British Central African Administration, recently built by Mr. Yule, and commanded by that able officer, who has made valuable contributions to our knowledge of the mammal-fauna of the surrounding district. Here the party remained some days, and large additions were made to the collections.

On July 22nd Mr. Whyte started on his return journey, taking the same road as far as Chirenji, and thence ascending the Masuku Range. After a few hours' hard climb, the crest of the mountain was reached about four miles east of the highest point, and the camp was pitched under some fine trees at the edge of one of the patches of large virgin forest. In this district, which is locally known as the "Kekombe" country, the climate at this season was delightful. Its height was estimated at from 6500 to 7200 feet. The camp was changed from the north-east to the south-west end of the plateau before the party returned to Karonga.

As will be seen by Capt. Shelley's carefully prepared list, excellent results were obtained in the Class of Birds. The collection brought back consists of 345 specimens belonging to 155 species, 45 of which are now recorded for the first time from Nyasaland, and 4 are described as new to science.

With regard to the extension of our knowledge of the geographical distribution of the Nyasan avifauna afforded by this collection, the following summary will show the results:—The local forms are fourteen; sixteen species here attain their northern limit in Eastern Africa, twenty their southern limit, and seven their eastern limit. It will be obvious, therefore, that the expedition has added largely to our knowledge of the Nyasan avifauna.—P. L. S.

II. LIST OF THE BIRDS. (By Captain G. E. SHELLEY.)

1. NECTARINIA CUPREONITENS.

Nectarinia cupreonitens, Shelley; id. B. Afr. i. p. 2, no. 8.

Nectarinia famosa (nec Linn.), Reichen. Vög. Deutsch-Ost-Afr. p. 212.

Nectarinia subfamosa, Salvad. Ann. Mus. Civ. Gen. 1884, p. 138.

Nectarinia æneigularis, Sharpe, Ibis, 1891, pp. 444, 590.

Nyika Plateau and the Masuku Range, between 6000 and 7000 feet, June and July. The three adult males are all in full plumage. They belong to a small mountain-form of *N. famosa*, Linn., which ranges over Eastern Africa from Nyasaland to Abyssinia. Birds of this species in full plumage measure 8 inches in total length, while *N. famosa* measures 10·5; but the best distinguishing character is in the bill, which is much more curved and slightly shorter than in *N. famosa*.

2. NECTARINIA KILIMENSIS.

Nectarinia kilimensis, Shelley; id. B. Afr. i. p. 2, no. 14; Reichen. Vög. Deutsch-Ost-Afr. p. 212.

Nectarinia fliola, Hartl. J. f. O. 1890, p. 150.

Nectarinia gadowi, Bocage, Journ. Lisb. 1892, p. 256.

Nyika Plateau, June. Two adult males and a female. This species ranges northward to the Equator and westward to Angola.

3. CINNYRIS MICRORHYNCHUS.

Cinnyris microrhynchus, Shelley; id. B. Afr. i. p. 33, no. 28; Reichen. Vög. Deutsch-Ost-Afr. p. 211.

Songue, on the northern shores of Lake Nyasa, June. One adult male in full plumage. Nyasaland is the most southern known locality for this species, which ranges over Eastern Africa to the Equator.

4. CINNYRIS FALKENSTEINI.

Cinnyris falkensteini, Reichen.; Shelley, B. Afr. i. p. 3, no. 36; id. Ibis, 1893, p. 16, 1894, p. 13, 1896, pp. 180, 233.

Nyika Plateau and Kombi, 6000 to 7000 feet. One nestling in June; two in full adult male plumage and a female in July. This is another of the Sunbirds which belong to Eastern Africa northward from Nyasaland.

5. CINNYRIS LUDOVICENSIS.

Cinnyris ludovicensis (Bocage), Shelley, B. Afr. i. p. 4, no. 40; Sharpe, B. S. Afr. p. 830.

Nectarinia intermedia, Bocage, Journ. Lisb. 1880, p. 236.

Cinnyris erikssoni, Trimen, P. Z. S. 1882, p. 451, pl. 32.

Nyika Plateau, June. Four specimens in full adult male plumage. It is interesting to find this Sunbird (which replaces *C. afer* and *C. chalybeus* north of the Cunene River in the Portuguese West-African colony) also occurring in Nyasaland.

6. CINNYRIS PREUSSI.

Cinnyris preussi, Reichen.; Shelley, B. Afr. i. p. 4, no. 44.

Kombi (Masuku Range), 7000 feet, July. A full-plumaged male. This species was hitherto known only from Camaroons. It belongs to the group of *Cinnyris* which may be characterized by having the breast pale (never blackish), the entire head uniform green, the tail square, and a broad non-metallic scarlet breast-band. The following key may assist in recognizing the 7 known species of this group:—

a. A narrow metallic blue collar; upper tail-coverts blue.

a'. Abdomen ashy stone-colour.

a². Larger: wing 2·5 inches; scarlet pectoral band slightly paler and broader.

a³. Culmen 1·1; metallic pectoral band more violet.....

C. afer.

b³. Culmen 0·65; metallic pectoral band bluer.

C. ludovicensis.

b². Smaller: wing 2·25; scarlet pectoral band slightly darker and narrower. Culmen 0·9

C. chalybeus.

b'. Abdomen browner and shaded with olive-yellow.

c². Abdomen paler and yellower; metallic pectoral band and upper tail-coverts with a greenish shade. Culmen 0·75, wing 2·1....

C. mediocris.

d². Abdomen darker; metallic pectoral band and upper tail-coverts violet-blue.

c³. Larger: culmen 0·85, wing 2·25; back greener.....

C. preussi.

d³. Smaller: culmen 0·65, wing 2·05; back bluer.....

C. reichenowi.

b. No metallic blue collar; upper tail-coverts green, like the back. Culmen 0·65, wing not more than 2 inches.....

C. chloropygius.

7. CHALCOMITRA GUTTURALIS.

Chalcomitra gutturalis (Linn.), Shelley, B. Afr. i. p. 4, no. 49; id. Ibis, 1893, p. 17, 1894, p. 14.

Karonga, Kombi, and Fort Hill, July. Two full-plumaged males, a female, and an immature bird.

8. ZOSTEROPS ANDERSSONI.

Zosterops anderssoni, Shelley; id. B. Afr. i. p. 7, no. 88; id. Ibis, 1896, p. 180.

Nyika Plateau, June. One adult female, similar to the male previously recorded from Nyasaland.

a. Throat and under surface of body uniform yellow.

Wing 2·35 inches..... *Z. anderssoni.*

b. Throat and under surface of body yellow, passing into green on the flanks. Wing 2·3 inches;

white ring round the eye narrow..... *Z. virens.*

9. ZOSTEROPS VIRENS.

Zosterops virens, Bp.; Shelley, B. Afr. i. p. 7, no. 91; Sharpe, B. S. Afr. pp. 325, 834; Gadow, Cat. ix. p. 182.

Mayawa village on the Nyika Mountain, 6000 feet, June.

A male and female, similar in size and plumage. This species was formerly known to me only from Caffraria, Natal, and the Transvaal.

10. PARUS INSIGNIS.

Parus insignis, Cab.; Shelley, B. Afr. i. p. 9, no. 116.

Kombi, on the Masuku Range, 7000 feet, July. An adult female. The following key will show the characters of this species :—

- a. With no trace of white on the abdomen, thighs, or under tail-coverts.
 - a'. Smaller; tail entirely black. *P. leucopterus*.
 - b'. Larger; tail with narrow terminal white margins to the feathers *P. insignis*.
- b. With whitish edges to the under tail-coverts, and often some white on the abdomen and thighs.
 - } *P. niger*.
 - } *P. xanthostomus*.

The original description of this species (*Parus insignis*, Cab., J. f. O. 1880, p. 419) is :—"Similar to *P. leucopterus*, but larger in all its dimensions and with narrow white ends to the outer tail-feathers. Angola (*Schütt*)."

As this species is new to the British Museum, I make the following notes from that collection :—

P. insignis : Length 6·1 inches, culmen 0·55, wing 3·5, tail 3·0, tarsus 0·8.

P. leucopterus : Length 6·1 inches, culmen 0·5, wing 3·2, tail 2·6, tarsus 0·7.

The wing-measurements are : in specimen of *P. leucopterus* from N.E. Africa, 3·0 to 3·4 inches; from the Gambia and Volta River, 2·9 to 3·0; one from the Congo, 3·4; one from Angola, 3·3.

11. PARUS PALLIDIVENTRIS.

Parus pallidiventris, Reichen.; Shelley, B. Afr. p. 9, no. 121; id. Ibis, 1894, p. 469; Reichen. Vög. Deutsch-Ost-Afr. p. 214.

Parus rostrumæ, Shelley, Bull. B. O. C. i. p. vi (1893).

Nyika Plateau and the Masuku Range, 6000 to 7000 feet, June and July. Four full-plumaged specimens are all labelled females. This species ranges north from Nyasaland to Kakoma and Usegua.

12. *ÆGITHALUS CAROLI*.

Ægithalus caroli, Sharpe; Shelley, B. Afr. i. p. 10, no. 132; Gadow, Cat. viii. p. 71, pl. i. fig. 1.

Anthoscopus caroli, Sharpe, B. S. Afr. pp. 327, 834.

Karonga, June. A female. This species ranges through Damara-, Swazi-, and Matabele- into Nyasaland. It has been recorded by Dr. Hartlaub (Abhand. nat. Ver. Brem. 1891, p. 18) from Ussambiro (3° S. lat., 33° E. long.); but this specimen, obtained by Emin, is referred by Dr. Reichenow to *Æ. capensis* (Vög. Deutsch-Ost-Afr. p. 214, where the description certainly applies to *Æ. capensis*.)

13. *MOTACILLA LONGICAUDA*.

Motacilla longicauda, Rüpp.; Shelley, B. Afr. i. p. 11 no. 146; id. Ibis, 1893, p. 27, 1894, pp. 23, 472.

Kombi, Masuku Range, 7000 feet, July. One specimen.

14. *ANTHUS RUFULUS*.

Anthus rufulus, Vieill.; Shelley, B. Afr. i. p. 12, no. 165; id. Ibis, 1893, p. 27, 1894, p. 23, 1896, p. 238.

Nyika Plateau and Pasilao, on Lake Nyasa, June; Karonga and Songue, in North Nyasa, July. Of the nine specimens, four are labelled males and five females.

15. *MACRONYX CROCEUS*.

Macronyx croceus (Vicill.); Shelley, B. Afr. i. p. 13, no. 170; id. Ibis, 1893, p. 27, 1894, p. 23.

Fort Johnston, July. One full-plumaged male.

16. *EMBERIZA ORIENTALIS*.

Emberiza orientalis (Shelley); id. B. Afr. i. p. 18, no. 240; id. Ibis, 1893, p. 27, 1894, pp. 23, 472.

Nyika Plateau, June; Fort Hill, July. Three males and two females. *Range*. Eastern Africa, from Nyasaland to the Equator.

17. *FRINGILLARIA TAHAPISI*.

Fringillaria tahapisi (Smith); Shelley, B. Afr. i. p. 18, no. 246; id. Ibis, 1894, p. 23.

Karonga, North Nyasa, June. One female.

18. *PASSER DIFFUSUS*.

Passer diffusus (Smith); Shelley, B. Afr. i. p. 20, no. 268; id. Ibis, 1894, p. 22.

Nyika Mountains from 2000 to 7000 ft., and Karonga, June; Fort Hill and Songue, in North Nyasa, July. Three males and a female.

19. *POLIOSPIZA STRIATIPECTUS*.

Poliospiza striatipectus, Sharpe, Ibis, 1891, p. 258; Shelley, B. Afr. i. p. 21, no. 276.

Nyika Plateau, June. One male. I have compared this bird with the two typical specimens in the British Museum. This species apparently ranges through Eastern Africa from the Equator to Nyasaland, the type having been discovered by Mr. Jackson at Elgeyo in July 1890.

20. *SERINUS ICTERUS*.

Serinus icterus (Bonn. et Vieill.); Shelley, B. Afr. i. p. 21, no. 285; id. Ibis, 1894, p. 22.

Fort Hill, July. A pair of these birds.

21. *SERINUS WHYTHI*, sp. n. (Plate XI.)

Nyika Plateau, June. One specimen labelled female.

Upper parts brownish black, with broad pale edges to the feathers; the pale edges of the feathers of the crown and hind neck paler and yellower than on the back and wing-coverts; quills and tail-feathers edged with yellow; sides of head dark olive-brown, surmounted by a broad, well-marked, sulphur-yellow eyebrow; throat uniform sulphur-yellow, shaded with dusky brown towards the chin; crop and body yellowish buff with black shaft-stripes, broad and very distinct on the front and sides of the body, and narrow on the under tail-coverts; thighs and centre of abdomen uniform; under wing-coverts yellowish buff; quills slaty brown beneath, with paler inner margins: bill horn-colour; legs brown. Total length 6 inches, culmen 0.55, wing 2.8, tail 2.75, tarsus 0.85.

This species belongs to that section of *Serinus* in which the flanks are streaked; the forehead with no yellow patch;



J.G. Keulemans del. et lith.

SERINUS WHEATH.



the back and rump similar in colour, brown mottled with dusky centres to the feathers.

a. With no white frontal patch.

a'. A broad eyebrow and the throat yellow; sides of head uniform dark olive-brown *S. whyti*.

b'. Head streaked with white; throat white *S. striolatus*.

b. With a white frontal patch *S. burtoni*
and *S. albifrons*.

22. VIDUA PARADISEA.

Vidua paradisea (Linn.); Shelley, B. Afr. i. p. 23, no. 316.

Steganura paradisea, Shelley, Ibis, 1894, pp. 21, 471.

Songue, in North Nyasa, July. Three young birds.

23. UROBRACHYA AXILLARIS.

Urobrachya axillaris, Smith; Shelley, B. Afr. i. p. 24, no. 328; id. Ibis, 1894, p. 471.

Kota-Kota, on Lake Nyasa, June. One male in full plumage.

24. QUELEA QUELEA.

Quelea quelea (Linn.); Shelley, B. Afr. i. p. 25, no. 350; Sharpe, Cat. xiii. p. 257, pl. x. fig. 3 (head of male); id. B. S. Afr. p. 458.

Nyika Plateau and Karonga, July. Two specimens exactly similar, with no black on the head. One is, I consider, incorrectly labelled male.

25. CRYPTOSPIZA AUSTRALIS.

Cryptospiza australis, Shelley, Ibis, 1896, p. 184.

Cryptospiza reichenowi (nec Hartl.), Shelley, Ibis, 1893, p. 26, 1894, p. 471.

Kombi, Masuku Range, 7000 ft., July. One adult female.

26. SPERMESTES SCUTATUS.

Spermestes scutatus (Heugl.); Shelley, B. Afr. i. p. 28, no. 382; id. Ibis, 1894, p. 21.

Nyika Plateau. An adult male and a young bird.

27. SPERMESTES NIGRICEPS.

Spermestes nigriceps, Cass.; Shelley, B. Afr. i. p. 28, no. 383; Sharpe, Cat. xiii. p. 263; Reichen. Vög. Deutsch-Ost-Afr. p. 184.

Spermestes rufodorsalis, Peters, Sharpe, B. S. Afr. p. 456.
Nyika Plateau, June. A fine adult male.

28. COCCOPYGIA DUFRESNII.

Coccopygia dufresnii (Vieill.) ; Shelley, B. Afr. i. p. 29,
no. 391 ; id. Ibis, 1893, p. 26.

Nyika Plateau, June. One female. This is the most
northern known range for the species.

29. GRANATINA ANGOLENSIS.

Granatina angolensis (Linn.) ; Shelley, B. Afr. i. p. 29,
no. 397.

Estrilda angolensis, Shelley, Ibis, 1893, p. 26.

Nyika Plateau, June. An adult female.

30. LAGGNOSTICTA RHODOPARIA.

Lagonosticta rhodoparia, Heugl. ; Shelley, B. Afr. i. p. 31,
no. 424 ; id. Ibis, 1893, p. 26, 1894, p. 22.

Nyika Plateau, June. Adult male and female, and a
young bird. Nyasaland is the most southern known locality
for this species, which ranges northward to Bogosland in
North-east Africa.

31. HYPARGUS NIVEIGUTTATUS.

Hypargus niveiguttatus (Peters) ; Shelley, B. Afr. i. p. 32,
no. 444.

Lagonosticta niveiguttata, Shelley, Ibis, 1893, p. 27 ; 1894,
p. 22.

Nyika Plateau, July. An adult male.

32. ANAPLECTES RUBRICEPS.

Anaplectes rubriceps (Sundev.) ; Shelley, B. Afr. i. p. 35,
no. 478 ; id. Ibis, 1893, p. 24.

Fort Hill, July. One specimen, labelled male, in the same
plumage as the type of *Sharpia ayresi* (Ibis, 1882, p. 353,
pl. vii. fig. 2).

33. HYPHANTORNIS BERTRANDI.

Hyphantornis bertrandi, Shelley, Ibis, 1893, p. 23, pl. ii.,
1894, p. 20 ; id. B. Afr. i. p. 39, no. 548.

Songue, in North Nyasa, June and July. Two apparently
adult females of this species. This is one of the local species,

which has not been recorded from beyond the limits of Nyasaland.

34. *HYPHANTORNIS NIGRICEPS*.

Hyphantornis nigriceps, Layard; Shelley, B. Afr. i. p. 40, no. 561; id. Ibis, 1893, p. 23, 1894, p. 19, 1896, p. 237.

Fort Hill and Karonga, July. Two immature birds labelled male and female.

35. *ORIOLOUS NOTATUS*.

Oriolus notatus, Peters; Shelley, B. Afr. i. p. 41, no. 570; id. Ibis, 1894, p. 19.

Nyika Plateau, 6000 to 7000 ft., Malosis 3000 ft., and Karonga. Three adult, and one young, males, and an adult female.

36. *ORIOLOUS LARVATUS*.

Oriolus larvatus, Licht.; Shelley, B. Afr. i. p. 41, no. 572; id. Ibis, 1893, p. 22, 1894, pp. 19, 470, 1896, p. 236.

Nyika Plateau and Karonga, June, and Mpata, July. An adult male and female, and two immature birds.

37. *LAMPROCOLIUS SYCOBIUS*.

Lamprocolius sycobius (Licht.); Shelley, B. Afr. i. p. 43, no. 600; id. Ibis, 1893, p. 22, 1894, p. 19, 1896, p. 183.

One specimen not labelled.

38. *DILOPHUS CARUNCULATUS*.

Dilophus carunculatus (Gm.); Shelley, B. Afr. i. p. 46, no. 630; Sharpe, Cat. xiii. p. 61; id. B. S. Afr. p. 421; Reichen. Vög. Deutsch-Ost-Afr. p. 171.

South of Mount Waller, June. An adult female.

39. *CORVULTUR ALBICOLLIS*.

Corvultur albicollis (Lath.); Shelley, B. Afr. i. p. 46, no. 632; id. Ibis, 1893, p. 22.

Nyika and Masuku Mountains, July. Three males and one female.

40. *CORVUS SCAPULATUS*.

Corvus scapulatus, Daud.; Shelley, B. Afr. i. p. 46, no. 634; id. Ibis, 1894, p. 19.

Masuku Plateau, July. One female.

41. *DICRURUS AFER*.

Dicrurus afer (Licht.); Shelley, B. Afr. i. p. 47, no. 646; Reichen. Vög. Deutsch-Ost-Afr. p. 166.

Buchanga assimilis (Bechst.); Shelley, Ibis, 1893, p. 21; 1894, p. 18.

Karonga, June. An adult female.

42. *PRIONOPS TALACOMA*.

Prionops talacoma, Smith; Shelley, B. Afr. i. p. 49, no. 666; id. Ibis, 1893, p. 21, 1894, p. 471.

Nyika Plateau and lower down the mountain near Malosis at 3000 ft., and on the shores of the lake south of Karonga, June. One male and two females, all adult.

43. *CAMPOPHAGA NIGRA*.

Campophaga nigra, Vieill.; Shelley, B. Afr. i. p. 50, no. 675; id. Ibis, 1893, p. 20, 1894, p. 18.

Nyika Plateau; Ukala village, on the same mountain at 3000 ft.; and Songue, June and July. Two in the black, four in the mottled dress.

44. *FISCUS COLLARIS*.

Fiscus collaris (Linn.); Shelley, B. Afr. i. p. 51, no. 693.

Lanius collaris, Shelley, Ibis, 1893, p. 19; 1894, p. 15.

Kombi and Fort Hill (Masuku Range), July. Three adult specimens, all labelled females, which I believe to be incorrect, as the females of the genus *Fiscus* are always distinguishable by having a chestnut patch on the flanks, and none of these specimens have that mark.

45. *FISCUS SOUSÆ*.

Lanius sousæ (Bocage); Shelley, B. Afr. i. p. 52, no. 701; Gadow, Cat. viii. p. 254.

Nyika Plateau, June. An adult pair. These are the first adult specimens I have seen. The tail is long and much graduated, and the feathers are very narrow. The sexes only differ in the females having the flanks chestnut, and the species properly belongs to the genus *Fiscus*, where it was first placed by Prof. Barboza du Bocage. This is, I believe, the first record of the species being found beyond the limits of the Portuguese colony of Benguela.

46. LANIARIUS MOSAMBICUS.

Laniarius mosambicus (Fisch. & Reichen.) ; Shelley, B. Afr. i. p. 53, no. 723 ; id. Ibis, 1896, p. 235.

Dryoscopus sticturus (nec Hartl. & Finsch) ; Shelley, Ibis, 1893, p. 20.

Dryoscopus mosambicus, Shelley, Ibis, 1894, p. 16.

Kombi (Masuku Range), 7000 ft., and Songue, July. One adult and two immature specimens.

47. LANIARIUS NIGERRIMUS.

Laniarius nigerrimus (Reichen.) ; Shelley, B. Afr. i. p. 54, no. 733.

Dryoscopus nigerrimus, Reichen. Vög. Deutsch-Ost-Afr. p. 162.

Karonga, July. An adult male. This is the furthest south any of the three species of Black Bush-Shrikes have been met with.

48. DRYOSCOPIUS CUBLA.

Dryoscopus cubla (Shaw) ; Shelley, B. Afr. i. p. 55, no. 742; id. Ibis, 1893, p. 20, 1894, p. 16.

Nyika Plateau, June. An adult male and female.

49. BOCAGIA ANCHIETÆ.

Bocagia anchietæ (Bocage) ; Shelley, B. Afr. i. p. 55, no. 750.

Telephonus anchietæ, Shelley, Ibis, 1893, p. 20 ; 1894, p. 18.

Telephonus minutus (nec Hartl.) ; Reichen. Vög. Deutsch-Ost-Afr. p. 159.

Fort Hill, July. An adult female. This species ranges from Angola into Eastern Africa from the Zambesi (Nyasaland) to the Equator (Lamu), and its ally, *B. minuta*, ranges over the Congo and Gold Coast districts to the Upper White Nile. To which of these two belongs the Uganda bird (*Telephonus minutus*, Reichen. J. f. O. 1892, p. 39) I am unable to tell, not having seen a specimen from that locality. *B. anchietæ* is readily distinguished from *B. minuta* in having no black on the scapulars. The females of both species are distinguished from their respective males by having a broad white eyebrow.

50. TELEPHONUS SENEGALUS.

Telephonus senegalus (Linn.) ; Shelley, B. Afr. i. p. 55, no. 751 ; id. Ibis, 1893, p. 20, 1894, p. 18, 1896, p. 236.

Nyika Plateau, June ; Karonga and Songue, July ; Zomba, August. Four specimens.

51. MALACONOTUS SULPHUREIPECTUS.

Malaconotus sulphureipectus (Less.) ; Shelley, B. Afr. i. p. 56, no. 769.

Laniarius sulphureipectus, Shelley, Ibis, 1893, p. 20 ; 1894, p. 16.

Wyie River, June. An adult female.

52. MALACONOTUS BLANCHOTI.

Malaconotus blanchoti, Steph. ; Shelley, B. Afr. i. p. 57, no. 778 ; id. Ibis, 1896, p. 182.

Laniarius poliocephalus (nec Licht.) ; Shelley, Ibis, 1894, p. 16.

Nyika Range, 4000 ft., June. An adult male.

53. CRATEROPUS KIRKI.

Crateropus kirki, Sharpe ; Shelley, B. Afr. i. p. 58, no. 795 ; id. Ibis, 1893, p. 13, 1894, p. 11.

Nyika Plateau, June ; and Kondowe, July. An adult male and a young bird.

54. PYCNONOTUS LAYARDI.

Pycnonotus layardi, Gurney ; Shelley, B. Afr. i. p. 60, no. 830 ; id. Ibis, 1893, p. 13, 1894, p. 468, 1896, p. 232.

Nyika Plateau, June ; Kombi, 7000 ft., and Fort Hill, July. Four specimens.

55. ANDROPADUS MASUKUENSIS, sp. n.

Masuku Range, 7000 ft., July. Two males and a female.

Upper parts uniform yellowish green, with the shafts of the tail-feathers and quills, and the inner webs of most of the latter, brownish black ; sides of the head like the upper part ; throat and under surface of the body paler, under surface of the shafts of the tail-feathers nearly white ; under wing-coverts and inner margins of the quills pale whitish yellow : bill with the upper mandible blackish and the under mandible pale ; legs dusky.

♂. Total length 6·7 inches, culmen 0·55, wing 3·2, tail 3·2, tarsus 0·85.

♀. Total length 7 inches, culmen 0·55, wing 3·3, tail 3·2, tarsus 0·85.

This species belongs to that group of the genus *Andropagus* with no moustachial streak and no yellow under tail-coverts.

a. Upper parts uniform green with no rufous shade on the tail.

a'. Larger: wing 3·8 inches *A. montanus*.

b'. Smaller: wing 3·2 to 3·3 inches; bill not serrated *A. masukuensis*.

b. With a rufous shade on the tail.

c'. Wing not less than 3 inches.

a². Under wing-coverts and inner edges of quills yellow; wing 3·45 inches; bill generally but not always serrated *A. importunus*.

b². Under wing-coverts olive-yellow, like the breast; inner margins of quills brownish white *A. zombensis*.

d'. Wing less than 3 inches *A. virens* and *minor*.

56. CRINIGER PLACIDUS.

Criniger placidus (Shelley); id. B. Afr. i. p. 63, no. 876; id. Ibis, 1896, p. 179.

Xenocichla placida; Shelley, Ibis, 1894, p. 10.

Phyllostrephus placidus, Reichen. Vög. Deutsch-Ost-Afr. p. 206.

Kombi and Songue, July. A male and female. This species ranges northward to Kilimanjaro.

57. CRINIGER OLIVACEICEPS.

Criniger olivaceiceps, Shelley, Ibis, 1896, p. 179.

Kombi (Masuku Plateau), 7000 ft., July. One female. This appears to be a local common Nyasaland bird.

58. CRINIGER FUSCICEPS.

Criniger fusciceps (Shelley); id. B. Afr. i. p. 63, no. 880; id. Ibis, 1869, p. 232.

Xenocichla fusciceps, Shelley, Ibis, 1893, p. 13; 1894, p. 10, pl. i. fig. 2, p. 468.

Nyika Plateau and at mouth of Wyie River in North Nyasa. Five specimens, showing that the sexes are similar

in plumage. Like the last species, it appears to be plentiful in Nyasaland, but has not been recorded from anywhere else.

59. *PHYLLOSTROPHUS CERVINIVENTRIS*.

Phyllostrophus cerviniventris, Shelley, Ibis, 1894, p. 10, pl. ii. fig. 1; id. B. Afr. i. p. 65, no. 901.

Nyika Plateau and Karonga, June and July. Two males and two females perfectly similar in plumage.

60. *SYLVIELLA LEUCOPSIS*.

Sylviella leucopsis, Reichen. Orn. Centralbl. 1879, p. 114; id. Vög. Deutsch-Ost-Afr. p. 223.

Sylviella whytii, Shelley, Ibis, 1894, p. 13; id. B. Afr. i. p. 70, no. 968.

Fort Hill and Miniwandi on Tanganyika Plateau, July. Two specimens. This species ranges from Nyasaland to Manda Island.

61. *CRYPTOLOPHA RUFICAPILLA*.

Cryptolopha ruficapilla (Sundev.) ; Shelley, B. Afr. i. p. 70, no. 975; Sharpe, Cat. iv. p. 400, pl. xii. fig. 1.

Pindalus ruficapillus, Sharpe, B. S. Afr. pp. 302, 829.

Kombi, on the Masuku Range, 7000 ft., July. A single specimen. This is the first time the species has been recorded from north of the Zambesi.

62. *CISTICOLA NIGRILORIS*, sp. n. (Plate XII. fig. 2.)

Kombi (Masuku Range, 7000 ft.), July. A male and two females.

Upper surface uniform brown, slightly paler on the rump, and with narrow rufous edges to the quills and tail-feathers; forehead, crown, and nape deep tawny rufous, with the sides of the forehead, eyelids, and in front of the eye black; cheeks, ear-coverts, throat, and a central line down the body uniform tawny-shaded white; the upper parts of the ear-coverts inclining to rufous, and the sides of the body and the under tail-coverts ashy brown; thighs tawny buff; tail with a broad black subterminal bar and pale ends. Bill black, with only a small portion of the keel pale; legs pale rufous brown.

♂. Total length 6.95 inches, culmen 0.55, wing 2.75, tail 3, tarsus 1.05.

♀. Total length 6.3 inches, culmen 0.6, wing 2.8, tail 3.3, tarsus 1.05.

This species may be readily recognized by its short black bill and the absence of any pale colouring in front or over the eye.

It belongs to that group of *Cisticola* which has the back uniform, tail with a dark subterminal bar, and the head with a rufous cap.

- a. Quills with their outer edges ashy brown (*C. ruficapilla*, *emini*, *rufopileata*, *chubbi*, and *angusticauda*.)
- b. Quills edged with rufous.
 - a'. Quills only narrowly edged with rufous *C. nigriloris*.
 - b'. Rufous on quills forms a conspicuous wing-patch. *C. cinerascens*.

63. *CISTICOLA CINERASCENS*.

Cisticola cinerascens (Heugl.); Shelley, B. Afr. i. p. 75, no. 1051; id. Ibis, 1893, p. 15, 1894, p. 12.

Nyika Plateau, June. A male and female.

64. *SCHÆNICOLA APICALIS*.

Schænicola apicalis (Licht.); Shelley, B. Afr. i. p. 77, no. 1077; id. Ibis, 1894, p. 12.

Nyika Plateau, June. A female.

65. *BRADYPTERUS BRACHYPTERUS*.

Bradypterus brachypterus (Vieill.); Shelley, B. Afr. i. p. 77, no. 1078; id. Ibis, 1894, p. 12.

Kombi, July. One female. This species ranges over Africa south from Nyasaland and Benguela.

66. *EURYPTILA BABÆCULA*.

Euryptila babæcula (Vieill.); Shelley, B. Afr. i. p. 78, no. 1086.

Bradypterus babæculus, Reichen. Vög. Deutsch-Ost-Afr. p. 223.

Luscinola gracilirostris (Hartl.); Seebohm, Cat. v. p. 122.

Bradypterus gracilirostris, Sharpe, B. S. Afr. pp. 287, 825. Karonga, July. A female.

67. ERYTHROPYGIA BARBATA.

Erythropygia barbata (Finsch & Hartl.); Shelley, B. Afr. i. p. 82, no. 1143.

Cossypha barbata, Sharpe, Cat. v. ii. p. 43; id. B. S. Afr. pp. 227, 817.

Fort Hill, July. An adult female.

This is the most eastern locality known for the species. The type was discovered in Benguela by Mr. Anchieta, and Capt. Storme procured it near Lake Tanganyika. According to Dr. Reichenow (Vög. Deutsch-Ost-Afr. p. 228), *E. quadri-virgata* is the species found in E. Africa from Kakoma to the Pangani, and it is an interesting fact that the latter species has also been found by Mr. Whyte at Tshiramo, in Nyasaland (Ibis, 1894, p. 11).

The three closely allied species may be easily recognized by the following key:—

- a. Outer tail-feathers only tipped with white..... *E. leucosticta*.
- b. Outer tail-feathers with broad white ends.
 - a'. Terminal one-third of outer tail-feather white.
 - Slightly darker; a very distinct black band on each side of the crown *E. quadri-virgata*.
 - b'. Terminal two-thirds of outer tail-feather white.
 - Slightly paler; dark band on sides of crown incomplete *E. barbata*.

68. CICHLADUSA ARCUATA.

Cichladusa arcuata, Peters; Shelley, B. Afr. i. p. 84, no. 1160; id. Ibis, 1894, p. 11.

Karonga, June. A pair; sexes perfectly similar.

69. COSSYPHA NATALENSIS.

Cossypha natalensis, Smith; Shelley, B. Afr. i. p. 84, no. 1164; id. Ibis, 1893, p. 14.

Karonga and Kombi, June and July. An adult male and female, perfectly similar to each other, and an immature bird.

70. COSSYPHA CAFFRA.

Cossypha caffra (Linn.); Shelley, B. Afr. i. p. 84, no. 1165; id. Ibis, 1893, p. 14, 1896, p. 180.

Nyika Plateau, June. Three males and three females, all similar in plumage.



Mintern Bros. imp.

1. LESSONORNIS MODESTA. 2. CISTICOLA NIGRILORIS.

71. *COSSYPHA HEUGLINI*.

Cossypha heuglini, Hartl. ; Shelley, B. Afr. i. p. 84, no. 1171 ; id. Ibis, 1893, p. 14, 1894, p. 11.

Nyika Plateau, June. One female.

72. *BESSONORNIS MODESTA*, sp. n. (Plate XII. fig. 1.)

Karonga, July. A female.

Upper parts uniform ashy brown, with the rump, upper tail-coverts, and tail cinnamon-rufous ; centre tail-feathers dark brown, with base and broad edges cinnamon, the remainder of the tail-feathers with dark-brown ends, much broader on the outer than on the inner webs ; wings darker brown than the back and with narrow pale edges to the feathers ; ear-coverts brown, with a slight chestnut shade ; lores, a narrow edging to the forehead, cheeks, throat, abdomen, thighs, and under tail-coverts white, shading into very pale ashy brown on the crop, fore-chest, and sides of body ; axillaries and under wing-coverts nearly white, inner margins of quills cinnamon tinted white. Bill and legs black. Total length 6 inches, culmen 0·55, wing 3·3, tail 2·5, tarsus 1.

This species comes into the genus *Bessonornis*, according to the List (B. Afr. i. pp. 84, 85), based upon the following key :—

- a. Tail never bright yellow, or white, with a dark terminal band and dark centre feathers.
 - a'. Outstretched feet do not reach to the tip of the tail.
 - a². With no complete dark terminal band to the tail.
 - a³. Tail chestnut, with the centre pair of feathers entirely black or brown *Cossypha*.
 - b³. Tail entirely of one colour, or with white ends to some of the outer feathers *Neocossyphus*.
 - b². With a complete dark terminal bar to the tail, which is otherwise rufous, with the centre pair of feathers black or brown.
 - c³. Bill broad ; rictal bristles strongly developed ; centre tail-feathers with the basal portion rufous *Pseudocossyphus*.
 - d³. Bill less broad ; rictal bristles very slightly developed *Bessonornis*.

73. PRATINCOLA TORQUATA.

Pratincola torquata (Linn.); Shelley, B. Afr. i. p. 86, no. 1192; id. Ibis, 1893, p. 15, 1894, p. 12, 1896, p. 231.

Nyika Plateau and Kombi, June and July. Five specimens.

74. TARSIGER JOHNSTONI.

Tarsiger johnstoni (Shelley), Ibis, 1896, pp. 181, 234.

Pogonocichla johnstoni, Shelley, Ibis, 1893, p. 18; 1894, p. 14.

Nyika Plateau, Kombi, and Malosis, June and July. Ten specimens, all exactly similar, with the exception of one immature bird. This is one of the local forms; it has not yet been recorded from beyond the limits of Nyasaland, but appears to be common in that country.

75. TURDUS LITSITSIRUPA.

Turdus litsitsirupa, Smith; Shelley, B. Afr. i. p. 87, no. 1215; Sharpe, B. S. Afr. pp. 198, 813.

Geocichla litsitsirupa, Seebohm, Cat. v. p. 182.

Fort Hill, July. A female. This is, I believe, the first instance of the occurrence of this species north of the Zambesi.

76. TURDUS MILANJENSIS.

Turdus milanjensis, Shelley, Ibis, 1893, p. 12, 1894, p. 9, 1896, p. 231; id. B. Afr. i. p. 88, no. 1231.

Nyika Plateau, June. Two males and two females. "Bill and legs red" (*A. W.*). In the dried skin the bill is deep yellow and the legs pale brown. This bird is known only from Nyasaland and is represented by the nearest allied species, *T. cabanisi*, to the south of the Zambesi and *T. deckeni* in E. Africa.

- | | |
|---|------------------------|
| a. Darker; upper throat white, strongly streaked with black | <i>T. milanjensis.</i> |
| b. Paler; upper throat pale grey obscurely streaked with brown. | |
| a'. Less rufous on the abdomen and under wing-coverts | <i>T. cabanisi.</i> |
| b'. More rufous on the abdomen and under wing-coverts | <i>T. deckeni.</i> |

77. *TURDUS LIBONIANUS*.

Turdus libonianus (Smith); Shelley, B. Afr. i. p. 88, no. 1234; id. Ibis, 1893, p. 12, 1894, pp. 9, 468; Reichen. Vög. Deutsch-Ost-Afr. p. 233.

Fort Hill, July. Two males and a female.

78. *MONTICOLA ANGOLENSIS*.

Monticola angolensis, Sousa; Shelley, B. Afr. i. p. 89, no. 1244; id. Ibis, 1896, p. 179.

Nyika Mountains, from 5000 to 7000 ft., June, and Fort Hill, July. Four males and two females adult and one immature female.

79. *SAXICOLA LIVINGSTONII*.

Saxicola livingstonii (Tristram); Shelley, B. Afr. i. p. 90, no. 1255; Reichen. Vög. Deutsch-Ost-Afr. p. 236, fig. 104.

Saxicola pileata (nec Gm.); Shelley, Ibis, 1894, p. 468.

Shores of Nyasa Lake, south of Karonga. One specimen. To the north of the Zambesi this species, probably, entirely replaces *S. pileata*. Southward from the Zambesi specimens gradually assume a paler and more sandy colouring, those in the British Museum from Tete, on the south bank of the Zambesi, being almost intermediate in colouring. The late Mr. Seebohm did not consider *S. livingstonii* to be distinct from the more southern *S. pileata*, and, I may add, it is known that the female does not differ in plumage from the male (Cat. v. p. 397).

80. *MELÆNORNIS ATER*.

Melænornis ater (Sundev.); Shelley, B. Afr. i. p. 93, no. 1299.

Bradyornis ater, Shelley, Ibis, 1893, p. 21; 1894, p. 18.

Shore of Nyasa Lake, south of Karonga. One specimen.

81. *BRADYORNIS MURINUS*.

Bradyornis murinus, Finsch & Hartl.; Shelley, B. Afr. i. p. 93, no. 1302; id. Ibis, 1894, p. 470.

Nyika Range, north of Mount Waller. A female.

82. MUSCICAPA CÆRULESCENS.

Muscicapa cærulescens (Hartl.) ; Shelley, B. Afr. i. p. 94, no. 1314 ; id. Ibis, 1894, p. 14.

Nyika Plateau. Two females. These two specimens agree perfectly with one from Zomba, and are slightly larger than any of the other specimens I have examined in the British Museum. They are probably examples of the *Muscicapa cinereola*, Finsch & Hartl. Vög. Ostaf. p. 302, pl. iv. fig. 1 (Cat. iv. p. 154).

83. ALSEONAX SUBADUSTA, sp. n.

Alseonax adusta (nec Boie) ; Shelley, Ibis, 1896, p. 181.

Nyika Plateau and Fort Hill on Tanganyika Flat, 4000 ft. A male and female similar in size and plumage.

Similar to *A. adusta*, but with the upper parts paler and greyer (ashy grey) ; underparts paler ; white, with the sides of the throat and the crop with a pale, nearly uniform ashy shade ; the basal two-thirds of the lower mandible pale, remainder of bill black. Total length 4·75 inches, culmen 0·35, wing 2·6, tail 2, tarsus 0·5.

- a. Upper parts ashy brown ; sides of throat and the crop more streaked with ashy brown ; basal one-third of mandible pale *A. adusta*.
 b. Upper parts ashy grey ; sides of throat and the crop of a uniform ashy shade ; basal two-thirds of mandible pale *A. subadusta*.

84. PLATYSTEIRA PELTATA.

Platysteira peltata (Sundev.) ; Shelley, B. Afr. i. p. 97, no. 1357 ; id. Ibis, 1893, p. 18, 1894, pp. 14, 469.

Karonga, June. An adult bird.

85. PACHYPRORA DIMORPHA.

Pachyprora dimorpha, Shelley, Ibis, 1893, p. 18 ; id. B. Afr. i. p. 98, no. 1362.

Nyika Plateau. A female.

86. PACHYPRORA MOLITOR.

Pachyprora molitor (Hahn u. Küster) ; Shelley, B. Afr. i. p. 98, n. 1363 ; id. Ibis, 1893, p. 18, 1894, p. 15.

Nyika Plateau, June ; Fort Hill and Kombi (Masuku

Range, 7000 ft.), July. Seven specimens. Nyasaland appears to be the most northern range for this species in E. Africa, if *Batis puella* is distinct.

87. *ELMINIA ALBICAUDA*.

Elminia albicauda, Bocage; Shelley, B. Afr. i. p. 98, no. 1375; Sharpe, Cat. iv. p. 364; id. B. S. Afr. p. 838.

Nyika Plateau, June. A pair, perfectly similar and in beautiful condition. The species was hitherto known to me only by the description of the type, which came from Benguela.

88. *TROCHOCERCUS ALBONOTATUS*.

Trochocercus albonotatus, Sharpe; Shelley, B. Afr. i. p. 99, no. 1381; id. Ibis, 1893, p. 19, 1894, p. 469.

Kombi, on the Masuku Range, 7000 ft., July. A single specimen. Mr. Whyte has now collected five specimens from three very different highland districts in Nyasaland, and, as the type came from a mountain near the Equator, one would have expected to find it mentioned in Dr. Reichenow's 'Vög. Deutsch-Ost-Afr.' This is a fair example of how much the student at home yet has to learn from the field-naturalist with regard to geographical distribution, habits, and migration.

89. *CAPRIMULGUS FOSSII*.

Caprimulgus fossii, Hartl.; Shelley, B. Afr. i. p. 107, no. 1488; Hartert, Cat. xvi. p. 551; Sharpe, B. S. Afr. p. 803; Reichen. Vög. Deutsch-Ost-Afr. p. 140.

Karonga, July. A male. This species has a wide range, extending from the Gold Coast and Equator south to the Cunene and Limpopo Rivers.

90. *HAPALODERMA VITTATUM*.

Hapaloderma vittatum, Shelley; id. B. Afr. i. p. 108, no. 1501; id. Ibis, 1896, p. 178.

Kombi, July. Two males and two females. This species is apparently confined to Eastern Africa, where it ranges from Kilimanjaro into Nyasaland.

91. *CORACIAS CAUDATUS*.

Coracias caudatus, Linn.; Shelley, B. Afr. i. p. 109, no. 1515; id. Ibis, 1863, p. 7.

Fort Hill and shores of Lake Nyasa. A male and two females. Very generally distributed (*A. W.*).

92. *MELITTOPHAGUS MERIDIONALIS*.

Melittophagus meridionalis, Sharpe; Shelley, B. Afr. i. p. 110, no. 1524; id. Ibis, 1863, p. 7, 1894, p. 5.

Karonga, July. Two females.

93. *RHINOPOMASTUS CYANOMELAS*.

Rhinopomastus cyanomelas (Vieill.); Shelley, B. Afr. i. p. 113, no. 1559; id. Ibis, 1893, p. 8, 1894, p. 6, 1896, p. 230.

Fort Hill, July. An adult male.

94. *BYCANISTES CRISTATUS*.

Bycanistes cristatus (Rüpp.); Shelley, B. Afr. i. p. 114, no. 1570; id. Ibis, 1896, p. 178.

Masuku Plateau, 7000 ft., July. A male and female. This species ranges over Eastern Africa from Nyasaland into Abyssinia.

95. *LOPHOCEROS MELANOLEUCUS*.

Lophoceros melanoleucus (Licht.); Shelley, B. Afr. i. p. 114, no. 1579; id. Ibis, 1893, p. 8, 1894, pp. 6, 467.

Songue and Karonga, July. A male and female.

96. *CERYLE RUDIS*.

Ceryle rudis (Linn.); Shelley, B. Afr. i. p. 115, no. 1599; id. Ibis, 1893, p. 8, 1894, p. 6.

Karonga, July. A female.

97. *CERYLE MAXIMA*.

Ceryle maxima (Pall.); Shelley, B. Afr. i. p. 116, no. 1600; id. Ibis, 1894, p. 5, 1896, p. 230.

Florence Bay and Monkey Bay, June. A male and female.

98. *CORYTHORNIS CYANOSTIGMA*.

Corythornis cyanostigma (Rüpp.); Shelley, B. Afr. i. p. 116, no. 1606; id. Ibis, 1894, p. 5.

Karonga, July. One male.

99. HALCYON ORIENTALIS.

Halcyon orientalis, Peters; Shelley, B. Afr. i. p. 117, no. 1618; id. Ibis, 1893, p. 8, 1894, p. 6, 1896, p. 230.

Karonga, July. An adult female.

100. HALCYON CHELICUTENSIS.

Halcyon chelicutensis (Stanl.); Shelley, B. Afr. i. p. 117, no. 1619; id. Ibis, 1893, p. 8, 1894, p. 6.

Songue, July. A male.

101. COLIUS STRIATUS.

Colius striatus, Gm.; Shelley, B. Afr. i. p. 118, no. 1633; id. Ibis, 1894, p. 7.

Nyika Plateau and Ukala Bay, June; Fort Hill, July. Two males and a female. This is the most northern range known for this species; it extends southward to Natal and Cape Colony.

102. TURACUS LIVINGSTONII.

Turacus livingstonii, Gray; Shelley, B. Afr. i. p. 119, no. 1643; id. Ibis, 1893, p. 9, 1894, pp. 7, 467, 1896, p. 230.

Nyika Plateau, June; and Kombi, July. Six specimens.

103. CEUTHMOCHARES AUSTRALIS.

Ceuthmochares australis, Sharpe; Shelley, B. Afr. i. p. 122, no. 1681; id. Cat. xix. p. 403; Sharpe, B. S. Afr. p. 161, pl. v. fig. 1; Reichen. Vög. Deutsch-Ost-Afr. p. 108.

Karonga, June. One female.

104. COCCYSTES CAFER.

Coccytes cafer (Licht.); Shelley, B. Afr. i. p. 123, no. 1696; id. Ibis, 1894, p. 7.

Karonga, June. A male.

105. INDICATOR INDICATOR.

Indicator indicator (Gm.); Shelley, B. Afr. i. p. 124, no. 1713; id. Ibis, 1894, pp. 8, 467.

Nyika Plateau and Songue, July. Two specimens.

106. INDICATOR MAJOR.

Indicator major, Steph.; Shelley, B. Afr. i. p. 125,

no. 1714; id. Cat. xix. p. 6; Sharpe, B. S. Afr. pp. 168, 810.

Indicator böhmi, Reichen.; id. Vög. Deutsch-Ost-Afr. p. 114.

Nyika Plateau. An adult female.

107. *INDICATOR MINOR*.

Indicator minor, Steph.; Shelley, B. Afr. i. p. 125, no. 1718; id. Cat. xix. p. 9; Sharpe, B. S. Afr. pp. 169, 811; Reichen. Vög. Deutsch-Ost-Afr. p. 114.

Nyika Mountains, 3000 ft., June. An adult female.

108. *MELANOBUCCO MELANOPTERUS*.

Melanobucco melanopterus (Peters); Shelley, B. Afr. i. p. 126, no. 1729; id. Cat. xix. p. 19.

Pogonorhynchus melanopterus, Reichen. Vög. Deutsch-Ost-Afr. p. 116.

Karonga, July. A male and three females. This is the most southern locality known for this species.

109. *MELANOBUCCO TORQUATUS*.

Melanobucco torquatus (Dumont); Shelley, B. Afr. i. p. 126, no. 1737; id. Cat. xix. p. 24.

Pogonorhynchus torquatus, Sharpe, B. S. Afr. pp. 172, 811.

Nyika Plateau and Karonga, June. A male and female. These specimens agree perfectly with Natal birds, and are from the furthest limits north for this species yet recorded.

110. *BARBATULA EXTONI*.

Barbatula extoni, Layard; Shelley, B. Afr. i. p. 128, no. 1768; id. Ibis, 1896, p. 178.

Nyika Plateau. An adult male. This bird is known to range from Nyasaland south to the Transvaal, and westward into Benguela.

111. *CAMPOTHERA ABINGDONI*.

Campothera abingdoni (Smith); Shelley, B. Afr. i. p. 131, no. 1808; id. Ibis, 1894, p. 9.

Nyika Plateau, June; Karonga, July. Two specimens. This is the most northern limit known for this species, which ranges south into Natal.

112. *CAMPOTHERA BENNETTI*.

Campothera bennetti (Smith); Shelley, B. Afr. i. p. 131, no. 1821; Hargitt, Cat. xviii. p. 102; Reichen. Vög. Deutsch-Ost-Afr. p. 121.

Fort Hill, July. An adult female. This Woodpecker ranges south into the Transvaal and westward to Lake Ngami.

113. *DENDROPICUS ZANZIBARI*.

Dendropicus zanzibari, Malh.; Shelley, B. Afr. i. p. 132, no. 1821; id. Ibis, 1893, p. 12, 1894, pp. 9, 467, 1896, p. 231.

Dendropicus hartlaubi (nec Malh.); Reichen. Vög. Deutsch-Ost-Afr. p. 122.

Fort Hill, July. A male and two females. This species ranges through Eastern Africa, from the Zambesi to the Equator, and westward to Angola and the Congo.

114. *MESOPICUS GRISEOCEPHALUS*.

Mesopicus griseocephalus (Bodd.); Shelley, B. Afr. i. p. 133, no. 1839; Hargitt, Cat. xviii. p. 371.

Dendropicus menstruus, Gray; Sharpe, B. S. Afr. pp. 191, 812.

Nyika Plateau and Kondowe on Mount Waller, June. Five specimens. This species ranges over Africa southward from Nyasaland and Benguela.

115. *VINAGO DELALANDII*.

Vinago delalandii (Bp.); Shelley, B. Afr. i. p. 134, no. 1854; id. Ibis, 1896, p. 238.

Treron delalandii, Shelley, Ibis, 1893, p. 28, 1894, pp. 23, 473.

Mpata, July. A female.

116. *HAPLOPELIA JOHNSTONI*.

Haplopelis johnstoni, Shelley; id. B. Afr. i. p. 136, no. 1871; id. Ibis, 1893, p. 28, pl. iii., 1894, pp. 24, 472.

Nyika Plateau, June; Karonga, July. Two males. The present species is known only from Nyasaland, where it appears to be plentiful.

117. *TURTUR SEMITORQUATUS.*

Turtur semitorquatus (Rüpp.); Shelley, B. Afr. i. p. 136, no. 1878; id. Ibis, 1893, p. 28, 1894, p. 24, 1896, p. 238.

Fort Hill, July. Two specimens.

118. *TURTUR DAMARENSIS.*

Turtur damarensis, Finsch & Hartl.; Shelley, B. Afr. i. p. 137, no. 1884; Salvad. Cat. xxi. p. 426; Reichen. Vög. Deutsch-Ost-Afr. p. 69.

Turtur capicola (nec Sundev.) ; Shelley, Ibis, 1893, p. 28, 1894, p. 24.

Fort Hill, July. Two adults and one immature bird.

119. *TURTUR SENEGALENSIS.*

Turtur senegalensis (Linn.); Shelley, B. Afr. p. 137, no. 1887; Salvad. Cat. xxi. p. 449; Sharpe, B. S. Afr. pp. 568, 854; Reichen. Vög. Deutsch-Ost-Afr. p. 681.

Karonga, July. A female.

120. *CHALCOPELIA AFRA.*

Chalcopelia afra (Linn.); Shelley, B. Afr. i. p. 137, no. 1895; id. Ibis, 1894, pp. 24, 472.

Songue, July. A male.

121. *TYMPANISTRIA TYMPANISTRIA.*

Tympanistria tympanistria (Temm. & Knip); Shelley, B. Afr. i. p. 138, no. 1896; id. Ibis, 1893, p. 29, 1894, p. 472.

Nyika Plateau, June. Male and female adult; the latter is distinguished by a dusky shade on the throat.

122. *ÆNA CAPENSIS.*

Æna capensis (Linn.); Shelley, B. Afr. i. p. 138, no. 1897; Salvad. Cat. xxi. p. 501; Sharpe, B. S. Afr. pp. 572, 854; Reichen. Vög. Deutsch-Ost-Afr. p. 71.

Karonga, June. A female.

123. *PŒOCEPHALUS FUSCICAPILLUS.*

Pæocephalus fuscicapillus (Verr. & Des Murs); Shelley, B. Afr. i. p. 139, no. 1906; id. Ibis, 1893, p. 12, 1894, p. 9.

Monkey Bay, July. An adult female.

124. *SYRNIUM WOODFORDI*.

Syrnium woodfordi (Smith); Shelley, B. Afr. i. p. 142, no. 1945; id. Ibis, 1894, p. 3.

Nyika Plateau and Karonga, July. Two females; the former is considerably paler and smaller than the latter.

125. *GLAUCIDIUM PERLATUM*.

Glaucidium perlatum (Vieill.); Shelley, B. Afr. i. p. 142, no. 1948; id. Ibis, 1894, p. 4.

Mpata, 3000 ft., June. A male.

126. *SCOTOPELIA PELI*.

Scotopelia peli, Temm.; Shelley, B. Afr. i. p. 144, no. 1971; id. Ibis, 1894, p. 465; Reichen. Vög. Deutsch-Ost-Afr. p. 97.

Karonga, July. A male and female.

127. *FALCO RUFICOLLIS*.

Falco ruficollis, Swains.; Shelley, B. Afr. i. p. 145, no. 1982; Sharpe, Cat. i. p. 404; id. B. S. Afr. pp. 60, 800; Reichen. Vög. Deutsch-Ost-Afr. p. 95.

Karonga, July. A female.

128. *ERYTHROPUS DICKINSONI*.

Erythropus dickinsoni (Sclat.); Shelley, B. Afr. i. p. 145, no. 1989.

Falco dickinsoni, Shelley, Ibis, 1894, p. 464; Reichen. Vög. Deutsch-Ost-Afr. p. 95.

Fort Hill and shores of Lake Nyasa, 20 miles south of Karonga, June. Found nesting among the fronds of the tall palms (*A. IV.*). The two specimens sent are labelled male and female, and are very similar. This Falcon ranges from Nyasaland, north to the Rovuma River, and westward into Benguela.

129. *HALIAËTUS VOCIFER*.

Haliaëtus vocifer (Daud.); Shelley, B. Afr. i. p. 148, no. 2014; id. Ibis, 1894, pp. 3, 464; Reichen. Vög. Deutsch-Ost-Afr. p. 90.

Karonga, July. A fine adult male.

130. NISAËTUS SPILOGASTER.

Nisaëtus spilogaster (Bp.); Shelley, B. Afr. i. p. 149, no. 2026; Sharpe, Cat. i. p. 252; id. B. S. Afr. pp. 38, 797. Karonga, July. A male.

131. SPIZAËTUS CORONATUS.

Spizaëtus coronatus (Linn.); Shelley, B. Afr. i. p. 149, no. 2029; Sharpe, Cat. i. p. 266; id. B. S. Afr. p. 39.

Nyika Plateau, July. "This was the only specimen of this grand Eagle we met with. It had just lunched off a young Clip-springer Antelope, and was gorged" (*A. W.*). The species is known to range over the whole of South and West Africa to as far north as Senegambia, but has not, I believe, been recorded from Eastern Africa north of Nyasaland.

132. LOPHOAËTUS OCCIPITALIS.

Lophoaëtus occipitalis (Daud.); Shelley, B. Afr. i. p. 149, no. 2030; id. Ibis, 1893, p. 6, 1894, p. 2, 1896, p. 229.

Karonga, June. A male and female.

133. BUTEO AUGUR.

Buteo augur, Rüpp.: Shelley, B. Afr. i. p. 150, no. 2032; Sharpe, Cat. i. p. 175; Reichen. Vög. Deutsch-Ost-Afr. p. 93.

Masuku Plateau, 7000 feet, July. The collection contains a female and a young bird. The latter was taken from its nest, in a tall tree, when only a few days old, and grew very rapidly during the two weeks it was kept alive (*A. W.*). This fine Buzzard ranges from Nyasaland, throughout Eastern Africa, to Abyssinia.

134. ASTUR POLYZONOIDES.

Astur polyzonoides (Smith); Shelley, B. Afr. i. p. 152, no. 2060; id. Ibis, 1894, pp. 2, 464.

Zomba, August. A female.

135. ASTUR TACHIRO.

Astur tachiro (Daud.); Shelley, B. Afr. i. p. 152, no. 2062; Sharpe, Cat. i. p. 99; id. B. S. Afr. p. 20; Reichen. Vög. Deutsch-Ost-Afr. p. 88.

Nyika Mountain, June. An immature female.

136. NEOPHRON PILEATUS.

Neophron pileatus (Burchell); Shelley, B. Afr. i. p. 155, no. 2097; Sharpe, Cat. i. p. 18; id. B. S. Afr. pp. 7, 794; Reichen. Vög. Deutsch-Ost-Afr. p. 81.

Nyika Plateau, July. This Vulture is uncommon on the Plateau (*A. W.*). The collection contains two fine specimens.

137. IBIS ÆTHIOPICA.

Ibis æthiopica (Lath.); Shelley, B. Afr. i. p. 155, no. 2098; id. Ibis, 1894, p. 477.

Fort Johnston, July. An adult male.

138. HAGEDASHIA HAGEDASH.

Hagedashia hagedash (Lath.); Shelley, B. Afr. i. p. 156, no. 2104; Sharpe, Cat. xxvi. p. 19; id. B. S. Afr. p. 739.

Theristicus leucocephalus (Gm.); Reichen. Vög. Deutsch-Ost-Afr. p. 55.

Karonga, June; Songue, July. A male and female.

139. ARDEA MELANOCEPHALA.

Ardea melanocephala, Vig. & Child.; Shelley, B. Afr. i. p. 157, no. 2121; id. Ibis, 1894, p. 27.

Karonga, July. A female.

140. ARDEA PURPUREA.

Ardea purpurea, Linn.; Shelley, B. Afr. i. p. 157, no. 2123; id. Ibis, 1894, p. 27, 1896, p. 238.

Karonga, July. An immature bird.

141. ANASTOMUS LAMELLIGERUS.

Anastomus lamelligerus, Temm.; Shelley, B. Afr. i. p. 159, no. 2143; id. Ibis, 1894, p. 476, 1896, p. 240.

Karonga, July. An adult female.

142. PHALACROCORAX AFRICANUS.

Phalacrocorax africanus (Gm.); Shelley, B. Afr. i. p. 160, no. 2153; id. Ibis, 1894, p. 28.

Lake Nyasa, June. An adult male.

143. PLOTUS LEVAILLANTI.

Plotus levillanti, Licht.; Shelley, B. Afr. i. p. 161, no. 2154; id. Ibis, 1894, p. 28.

Songue, July. An immature male.

144. *DENDROCYCNA FULVA*.

Dendrocygna fulva (Gm.); Shelley, B. Afr. i. p. 171, no. 2260; Salvad. Cat. xxvii. p. 149; Shelley, Ibis, 1894, p. 28.

Dendrocygna major, Sclat.; Shelley, Ibis, 1894, p. 477.
Songue, July. A female.

145. *TURNIX LEPURANA*.

Turnix lepurana (Smith); Shelley, B. Afr. i. p. 178, no. 2324; id. Ibis, 1894, p. 25.

Ruarwe, June; and Karonga, July. Eight specimens.

146. *TURNIX NANA*.

Turnix nana (Sundev.); Shelley, B. Afr. i. p. 178, no. 2325; id. Ibis, 1894, p. 473.

Karonga, July. One male. This species ranges over Southern Africa, north to Nyasaland, on the east side of the continent, and has been procured at Accra, on the Gold Coast.

147. *COTURNIX DELEGORGUEI*.

Coturnix delegorguei, Deleg.; Shelley, B. Afr. i. p. 179, no. 2332; Grant, Cat. xxii. p. 243; Sharpe, B. S. Afr. p. 605; Reichen. Vög. Deutsch-Ost-Afr. p. 79.

Karonga, July. A male.

148. *PTERNISTES CRANCHI*.

Pternistes cranchi (Leach); Shelley, B. Afr. i. p. 179, no. 2338; Grant, Cat. xxii. p. 178; Reichen. Vög. Deutsch-Ost-Afr. p. 77.

Kondowe Mission Station, between the Mount Waller and Nyika ranges, June. An adult male and female, and two chicks. And from the Masuku Mountains an adult bird. This species ranges over the Congo district, south-eastward to Lake Nyasa, and north-eastward to Bukoba in Uganda.

149. *FRANCOLINUS SHELLEYI*.

Francolinus shelleyi, Grant; Shelley, B. Afr. i. p. 181, no. 2366; id. Ibis, 1894, p. 473.

Nyika Plateau, June. A female, not quite adult. It

differs from the male and female previously procured by Mr. Whyte, and the type, in having the bars on the breast much narrower; but as the specimen is not quite in full plumage I should hesitate to call it a local race. *Range*: Eastern portion of S. Africa, from Natal to Nyasaland.

150. *FRANCOLINUS JOHNSTONI*.

Francolinus johnstoni, Shelley; id. B. Afr. i. p. 182, no. 2379; id. Ibis, 1894, p. 24; 1896, p. 184.

Nyika Plateau. Five males and four females. The slight characters which separate this species from *F. hildebrandti* appear to be quite constant, and it is apparently confined to Nyasaland.

151. *CHARADRIUS PECUARIUS*.

Charadrius pecuarius, Temm.; Shelley, B. Afr. i. p. 189, no. 2467; id. Ibis, 1894, p. 474.

Shores of Lake Nyasa, Songue, and Karonga, June and July. Three males and a female.

152. *CHARADRIUS PALLIDUS*.

Charadrius pallidus, Strickl.; Shelley, B. Afr. i. p. 189, no. 2468.

Ægialitis pallida, Sharpe, Cat. xxiv. p. 284.

Charadrius tenellus, Hartl.; Reichen. Vög. Deutsch-Ost-Afr. p. 34.

Shores of Nyasa Lake, June; and Karonga, July. A male and female. This species ranges from the Zambesi to Sindi in Eastern Africa, and from Angola to the Gold Coast in W. Africa.

153. *TOTANUS GLAREOLA*.

Totanus glareola (Linn.); Shelley, B. Afr. i. p. 192, no. 2491; id. Ibis, 1894, pp. 27, 476.

Karonga, June. A female.

154. *CURSURIUS TEMMINCKI*.

Cursorius temmincki, Swains.; Shelley, B. Afr. i. p. 194, no. 2517; Sharpe, Cat. xxiv. p. 41.

Cursorius senegalensis, Licht.; Sharpe, B. S. Afr. p. 654; Reichen. Vög. Deutsch-Ost-Afr. p. 32.

Karonga, June. A male.

155. RHINOPTILUS CHALCOPHTERUS.

Rhinoptilus chalcophterus (Temm.); Shelley, B. Afr. i. p. 195, no. 2523.

Cursorius chalcophterus, Shelley, Ibis, 1894, pp. 25, 474.
Nyika Hills, 4000 feet, June. A female.

XL.—*Birds'-nesting in and around Lucknow. Additional Notes taken in the Season of 1896.* By WILLIAM JESSE.

SINCE writing my former article, which appeared in 'The Ibis,' 1896, pp. 185–198, I have found several species breeding near Lucknow which are not mentioned in that list. In my later labours I have been most materially helped by Mr. P. J. Lucas of this station, who not only takes a great personal interest in ornithology, but possesses a very intimate acquaintance with the language and customs of the natives. By his help I have been able to get the villagers to keep a look-out for nests and to bring in word, and I have thus obtained the eggs of several birds which I had previously sought in vain.

AQUILA VINDHIANA (Franklin). Indian Tawny Eagle.

Hind. [*Lucknow*]: Wokháb.

This Eagle is common in Lucknow, and may often be seen mingling with the Kites and Vultures over the busiest parts of the city. Europeans here call it the Lugger, while the true Lugger is named the Pigeon-Hawk.

In the month of January I saw two nests of this bird, both at the very top of tall mango-trees on the outskirts of the station. One contained two eggs on the point of hatching, the other a half-fledged young one. The eggs are similar to those of the House-Kite (*Milvus forficatus*), but are of course much larger.

The Wokháb makes a large nest of sticks, and lines it with leaves. It is placed at the extreme tip of some large branch, and not in a thick fork, as is the case with Kites.

HALIAETUS LEUCORYPHUS (Blyth). Pallas's Fishing Eagle.
Hind. [Lucknow]: Báṛ, Dhenk.

Though not seen often in Lucknow itself, this fine Eagle breeds all over the Division from October to February, though most eggs are taken in November and December. The nest is an immense irregular structure of sticks, lined with leaves. It is in most cases placed in some high fork of a pipal-tree, near a jheel. The first I found was on Nov. 1st, but was empty, though the bird was sitting by it. The shikari was sent out to the place later, and brought in three fresh eggs on Nov. 23rd. These are greenish white, very faintly marked with brown. In the early part of January, Mr. Lucas brought in two more similarly marked fresh eggs.

LIOPICUS MAHRATTENSIS (Bonap.). Yellow-fronted Pied Woodpecker.

Mr. William Harper showed me a nest-hole in a tree in the compound of Messrs. Peake, Allen, and Co., chemists, from which he had taken three half-fledged young birds. These were placed in a cage and left out of doors during the day, and the parent birds visited them regularly and brought them food. Unfortunately the cage was placed in the sun by a careless servant and two of the brood died, but the third survived and was, when I saw it, in a most flourishing condition.

TACHORNIS BATASSIENSIS (Hartert). Palm-Swift.

On March 31st I observed several pairs breeding in the fan-palms in the Wingfield Park; and a few days later I saw some more in the Horticultural Gardens. Probably they had eggs, but, so far as I was concerned, the nests were quite inaccessible. This Swift does not appear to leave the neighbourhood of its favourite tree; at all events, I have not noticed the bird anywhere else in the station.

HIEROCOCCYX VARIUS (Horsf.). Common Hawk-Cuckoo.

Hind. [Lucknow]: Popíya.

On March 21st I took a nest of *Argya malcolmi* containing four eggs. Three of these were precisely similar in

shape, size, and shade of blue and were fresh; the fourth was considerably smaller, oval in shape, and of a much darker shade of colour, which was not lost on blowing; moreover this egg was hard-set. I cannot, of course, vouch for the egg, but its general appearance tends to point it out as parasitic. The Hawk-Cuckoos, or Brain-fever Birds as they are called here, had been "calling" for some weeks past, and hence I believe the egg to have belonged to this species. The other common Cuckoo, which lays a blue egg, is the Pied Crested Cuckoo (*Coccyzus jacobinus*), and it does not put in an appearance till June, after the "rains" have commenced.

PALÆORNIS CYANOCEPHALUS (Wagl.). Western Blossom-headed Parroquet.

Hind. [*Lucknow*]: Lal Tota.

Not nearly so numerous as *P. torquatus*, but it seems to be a permanent resident and to breed here. I saw numerous young in all stages in the city "Bird Market" at the end of March.

ARGYA MALCOLMI (Hume). Large Grey Babbler.

Hind. [*Lucknow*]: Bhaina.

This Babbler, which, strangely, I overlooked the previous season, is very common. I took its eggs from March to June. The nest is a much more straggling structure even than that of *Crateropus canorus*, and as often as not there is no attempt at concealment. Even in the breeding-season Babblers are very gregarious, although they do not nest in company. They are birds of weak flight, going only a short distance at a time, and doubtless they congregate together, feeling that there is safety in numbers.

LANIUS LAHTORA (Blyth). Indian Grey Shrike.

I found a nest containing two nearly fledged young in a babool-tree on July 11th, 1896. I have seen the eggs brought in several times, and the species seems to breed here from March till August.

Since writing the above, I have found a nest and four nearly fresh eggs of this species in a babool-tree on April

26th, 1897. And again, near the same spot as the above, another nest containing four fresh eggs, May 9th, 1897.

LANIUS VITTATUS, Valenciennes. Bay-backed Shrike.

This very handsome little Shrike appears to be somewhat locally distributed, being fairly common in certain spots and absent in others. It breeds from March to August, and I found several nests last year during that period. The nest is very pretty, made of grass and twigs, and lined with rags, wool, and hair. It is generally placed in a babool or in the so-called "cork"-tree, at a height varying from 10 to 20 feet from the ground. The largest number of eggs I have found is five; they are of the usual Shrike type and rather round in shape.

GRAUCALUS MACÆI (Less.). Large Cuckoo-Shrike.

This species is very generally distributed all over the Division, breeding apparently from March to the end of July. The only two nests I have seen were placed at the extreme tip of the branch, and were with difficulty discovered and reached. Both were small shallow cups made of twigs, slightly lined with wool and hair. One nest contained two eggs, which I am told is the usual number; the other was empty and the birds deserted without laying. These were both found in March. On June 29th I saw one of these birds fly across the road with a twig in its mouth. I was driving at the time and could not stop, and, though I went next day and searched very carefully, I could not find the nest. The European and Eurasian boys of Lucknow call this bird the "Tree-Plover" and the "Rain-bird,"—why, I do not know; and my pupils failed to recognize it as belonging to the Shrikes until I had pointed out its distinguishing characteristics.

TEMENUCHUS PAGODARUM (Horsf.). Black-headed Myna.
Hind. [*Lucknow*]: Pawái.

I observed several pairs during the season, but the only nest I saw was in a hole in a mango-tree and it contained half-fledged young on June 28th.

PLOCEUS BAYA (Blyth). Weaver-bird.

Hind. [Lucknow]: Baya.

A very curious nest of this species was brought to me by Mr. Lucas in the first week in October. This nest, or rather collection of nests, is composed of seven distinct egg-cavities placed one below the other. The different chambers appear to have been added year by year; the lowest only was composed of the season's grass, the material of the others getting older and older, the top one being so old that it seemed a wonder that it had not come to pieces with the weight of the lower stories. Three out of the seven chambers were in actual use, containing two, three, and three eggs respectively. Though I have seen hundreds of these nests, this is the first time I have noticed anything like the above.

PYRRHULAUDA GRISEA (Blyth). Ashy-crowned Finch-Lark.

Very numerous all over the wide sandy plains. I found several of its nests in March and April, and Mr. Lucas took their eggs again in September and October. The nest is a neat little cup placed in a hole or inequality in the ground, often under a plant or bush; it is, however, very loosely put together and has little or no lining. The number of eggs appears never to exceed two. This Lark always rises at once on being flushed and does not run a little way first, like most other species; hence its nest, which in ordinary cases would with difficulty be found, is discovered with comparative ease.

TURTUR CAMBAIENSIS (Gmelin). Brown Turtle-Dove.

Hind. [Lucknow]: Pindak; Pirki.

For a long time I was under the impression that this species was either wanting or rare around Lucknow, but I have since discovered that it is common enough in certain parts of the station. The four Doves, *T. cambaiensis*, *T. suratensis*, *T. humilis*, and *T. risorius*, appear to keep more or less to different localities. *T. suratensis* is the commonest Dove, making its nest in the verandas of houses as well as in bushes; *T. humilis* is especially partial to babool-

trees; *T. risorius* chiefly inhabits the mango-topes. In the north-eastern quarter of Lucknow *T. cambaiensis* is very common, and seems, in a great measure, to replace *T. suratensis*. In the early mornings all four species will be found feeding together in the fields. I took my first nest of *T. cambaiensis* on March 28th. It was placed in a tangle of grass amongst the lower branches of a babool-tree about 2 feet from the ground. I shot the hen, which, falling close to another tree a little further on, startled a *T. risorius* from her nest and two eggs, and shortly after I got a nest of *T. suratensis*. I have never taken the eggs of *T. humilis* before the month of June.

In Lucknow itself most people call all Doves "Pindak" or "Pirki" without distinction, but in the district the large Doves, e. g. *T. risorius* and *T. meena*, are called "Fachhaw," the small Doves "Pirki"; Blue Rock-Pigeons are named "Khabúta," and the Green Pigeon "Hurrial."

PTEROCLES EXUSTUS (Temm.). Common Sand-Grouse.

This bird occurs locally around Lucknow, but not, I believe, in any great numbers. On June 14th, when out black-buck shooting with Messrs. P. S. Lucas and H. Fisher, the horse of the former put up a bird. Riding behind, I marked the spot, and on going up to it found a nest with three eggs. As we did not know the parentage of the eggs, it was necessary to shoot the bird, a matter of some difficulty as we had no shot-guns. However, the old bird kept flying round, finally settling some distance off, and at his second shot with the Winchester rifle Lucas bowled it over. It proved to be a hen, but we were unable to preserve it as it was so badly damaged and, moreover, became putrid before we reached home. Shortly after we came across some more Sand-Grouse and Lucas shot another, which this time turned out to be a cock. The nest was a circular hollow in the sand under a tuft of grass. It was lined with a few bits of grass and three feathers. The three eggs were oval in shape; in colour they were stone, richly marked and mottled with brown and purple.

LOBIPLUVIA MALABARICA (Bodd.). Yellow-wattled Lapwing.

Hind. [*Lucknow*]: Titiri.

This bird breeds locally from April to June on what are known here as "usar maidans," that is, barren sandy plains with stones and tufts of grass here and there. I have had the eggs brought me on various dates in May and as late as the 6th June: May is, I think, *the* month with this bird. For a long time I was not quite sure of the authenticity of these eggs, though I could not think of any other species to which they might belong. On May 30th of this year, however, we started a Lapwing off four eggs. Though we were unable to secure the parent, owing to the high wind, which prevented great accuracy with the rook-rifle, yet I have no doubt about these eggs. I managed to get within fifteen or twenty yards of the bird as it stood on a hillock, and examined it carefully. The nest was a hole scraped in the sand, the edge being fringed, as are the nests of the Red-wattled Lapwing, with bits of earth and kunker. There was of course no lining. Though not nearly so common as *L. goensis*, I think it is scarcely so rare here as many people seem to imagine.

GRUS ANTIGONE (Linn.). Sarus Crane.

Hind. Sáras.

Owing to the absence of any large jheels, this bird does not breed in the immediate vicinity of Lucknow. Lucas took a nest near Aturia, on the line between Lucknow and Sitapur, on Oct. 3rd. On Aug. 16th, as I was travelling to the "Hills," I saw two nests near Hardoi. The old Sarus was sitting on one, but the other was in process of construction, and it was very interesting to watch the bird pulling up with its bill the wet weeds and piling them into a great heap. Although the railway-line passed close to it, it took no notice of the train, and when I last looked it was still busy with its task, supremely indifferent to all external affairs.

HYDROPHASIANUS CHIRURGUS (Scop.). Pheasant-tailed Jacana.

This bird breeds all over Oudh and the North-west Provinces wherever there is sufficient water. We had numerous eggs brought to us in July and August, but the only date on which we took them ourselves was August 2nd. The eggs of this species are most characteristic and cannot be mistaken. They are peg-top in shape, of a beautiful bronze-green or brown in colour, and very highly polished.

CICONIA LEUCOCEPHALA (Gmelin). White-necked Stork.

Hind. [Lucknow]: Núhri.

On July 26th the shikari Dwarka brought in four white eggs, which he declared belonged to this species. They were taken from a large nest of sticks in a pipal-tree. Unfortunately he did not succeed in getting the parent birds, a most necessary precaution in all cases of identity where natives are concerned; but in this instance I feel pretty sure that the eggs are genuine. The species is common in Oudh and remains all the year round.

ARDEA COROMANDA (Bodd.). Cattle-Egret.

Hind. [Lucknow]: Lal Bogla.

ARDEA INTERMEDIA (Wagler). Lesser White Egret.

Hind. [Lucknow]: Sufaed Bogla.

On July 19th Lucas and myself were out in the district on the search for black-buck, when we were met by one of our egg-hunters, to say that he had found a nesting-place of several sorts of Bogla, and forthwith he led us to a village in which were two large trees—a pipal and a tamarind, on which he informed us the birds were breeding. The leaves and branches were very thick, and for the first few moments we could see nothing except a solitary Paddy-bird (*Ardeola grayi*). We were just making up our minds for a disappointment when we espied a Cattle-Egret sitting on its nest and promptly shot it for purposes of identification. At the report of the gun the two trees, which up to this time had

been perfectly still and silent, suddenly sprang to life and the air was filled with Cattle- and White Egrets circling round in all directions, the buff and snowy whiteness of the plumes showing up beautifully in the sunshine. We soon had a fine series of eggs, though we did not take one-quarter the number we might have done. Those of *A. coromanda* are of so light a blue as to be almost white, but those of *A. intermedia* are much darker and resemble the eggs of *A. cinerea*. To make sure that we were assigning the respective eggs to the right parents, we shot a specimen or two of each species on its nest. The nests of the Egret were made of sticks lined with leaves, and were much more cup-shaped than those of the Paddy-bird. We met a birdcatcher who had in his possession a White Egret with its eyes sewn up. This he informed us was a decoy-bird, and that when he had managed to secure any birds in breeding-plumage he plucked out the plumes and released the captives. Doubtless this must be uncomfortable for the Egret, to say the least of it; but it struck me that if it is absolutely necessary to have Egret's feathers, it is a better way of obtaining them than that which has resulted in the wholesale destruction of one of the most beautiful of the feathered race.

PODICIPES MINOR (Linnæus). Little Grebe.

Hind. [*Lucknow*]: Dhub-Dhub.

This species, though I have not seen it in Lucknow itself, is very common on the tanks and jheels in the district. On August 2nd we got three nests containing five, four, and one egg respectively. The nests were the usual floating mass of dead and decaying weed. The five eggs in one nest were stained a deep chocolate-red, which only partially disappeared on washing. Other nests were brought to us containing six eggs. It is very difficult to watch these little birds on their nests; they slip into the water noiselessly the moment they suspect danger, and hide away among the reeds.

XLI.—*Notes on Ibidorhynchus struthersii*.

By Captain W. WILFRID CORDEAUX.

THIS bird is very local in its distribution. Personally I have observed it only in the neighbourhood of the Lanwi La, on the Kashmir side of the pass, for a distance of twenty miles down the Wurdwan River, which rises from the foot of the great Bhutkol glacier, along the surface of which is the trackway over the Lanwi La. Across the pass I have seen the bird at Dunore, the first camping-ground on the Ladakh side: from thence to Suru village and fort, along the valley of the Chiloong River to its junction with the Suru River, and below this for about seven miles down the Suru towards Sanko.

The Lanwi La or Bhutkol Pass, elevation 14,350 feet, is the chief route between the Wurdwan country and Ladakh. Lanwi La is the Bhotia name for the pass, the word La meaning a pass; the Kashmiris call it the Bhutkol. Both the Wurdwan and Chiloong Rivers are, like all streams rising from glaciers, broken up by numerous sandbanks, which divide them into a network of shallow streams. It is here that *Ibidorhynchus* is met with, searching with great activity for small crustacea along the edge of the water, and moving with a quick run, very like a Redshank; sometimes they will swim across a pool of water or narrow stream.

The birds are invariably met with in pairs both in and out of the breeding-season, which commences during the second week in May, as I had the nestlings brought me on the 30th June, 1896, evidently about twelve days old. These closely follow the colouring of the old birds—a dark grey-blue above, lighter on the lower parts. In places the down is faintly marked with brown. The legs are a greenish grey. The bill, unlike the crimson-red of the mature bird, is sepia-black; iris brown. The grey-blue colour of the young assists it very materially to conceal itself in the shingle, which is of the same tint. The old birds are very difficult to see at a distance of 30 or 40 yards in the glare of a Ladakh sun, as they assimilate so nearly to the background

of white and blue stones, and are rendered more conspicuous by the black band across the breast, which is quite wanting in the young bird.

The nest is merely a saucer-shaped depression in the sand. The natives know the bird well, and told me that their children find the eggs; and the Ladakhi boy is a terror among birds' eggs, which he loves to suck whenever he gets the chance. The natives also say that the bird lays one or two eggs, and the colour is grey-blue with dark markings. This sounds likely, as it is a good protective colour, and would make it very hard to detect the egg among the shingle. I got this information from the head man at Suru; and when I asked him as to what colour the egg was, after some thought he picked up a blue pebble and said, "Like this, sahib, with black markings" (*kala nishan*).

I made a rough drawing of the young bird, which I afterwards sent, preserved in spirit, to Professor Newton at Cambridge.

The call of the old bird more nearly resembles that of the Whimbrel than any other I can mention.

XLII.—*Notes on the Godwits (Limosa).*

By E. A. S. ELLIOT.

AMONGST the Waders, a class of birds I have had unusual opportunities of watching for many years along the shores of Kingsbridge Estuary, South Devon, the Bar-tailed Godwits have always been a great attraction. The striking change of plumage from winter to summer, their erratic appearance at the times of migration, and the desire to raise this group above the level of that hen-pecked one of Phalaropes, to which they have been likened in their habits of courtship and nidification, have induced me to follow the Godwit in his coming in and going out ever since I could tell one bird from another.

In the fall-migration the Bar-tailed Godwit arrives in our estuary the latter end of August in small flocks of six or

seven, sometimes in greater numbers, with increasing augmentation till about the beginning of November, when it is not unusual to find a flock of a hundred or more. As the cold weather approaches these birds leave us, but either a few remain behind, or others take their place in severe weather from the north-east coasts of England, where the species is abundant all through the winter; for I have obtained specimens during all the winter months, but in small numbers, and never at this season (mid-winter) could the species be said to exist in flocks.

As spring advances and April is ushered in, small straggling flocks of winter-plumaged birds, with rarely a red-coloured bird amongst them, may be found on their favourite feeding-grounds (the Godwits in our estuary have a partiality for one particular mudbank). The climatic conditions, however, must be favourable for their appearance: it must be stormy, with N.W. winds; for these birds seem to be a contingent from the flocks observed passing up the west coast of Ireland at this time, so that for many years in succession it happens we do not see a Godwit at all at this season, the elements not being propitious, and because we are out of the regular line of their spring migration. They seem to follow the east and west lines of our coast unless driven east or west by the prevailing wind.

When the month of May approaches, every legitimate prayer of the ardent observer is offered for an easterly wind, and strong of that; for if we get it continuously for the first week or ten days we may be sure of a visit of birds in splendid plumage. It is thus seen that a wind from an absolutely opposite quarter is required to bring in the May birds to what is required for the April ones. Sometimes when the wind has held in the east for several weeks, as it did in May 1876, the number of Godwits gathered in the estuary is past computation. In this memorable year only one person followed the birds, and at one shot with an ordinary shoulder-gun he killed twenty, so it can be imagined how thickly the flock crowded together. To show how rarely we get such a flight it must be mentioned that it was not until

nineteen years after (1895) that we got any considerable number in the estuary in full dress, and this was followed by a much bigger flight in 1896 under similar climatic conditions, and when a very beautiful series of males and females were secured. This year we got birds in April, but saw none in May ; the east wind came too late.

At the very first shift in the wind to the south or west the Godwit takes its leave, so that I have known birds in numbers in the estuary in the evening (just dropped in), and not one to be seen at daybreak next morning.

The autumn-plumaged bird, when the young and old so much resemble each other in plumage (the young may always be known by the proportionately shorter bill), and in which the females can only be separated from the males by their superior size and length of bill, needs no description. As winter advances some changes ensue that are interesting ; but, after all, it is only that change which is characteristic of many of our seaside Waders. I mean that the feathers of the mantle change from blackish brown with buff edging to ash-grey with white edging, and the same with the secondaries and wing-coverts, whilst the buff colour on the thorax disappears. As regards the markings on the tail, from which this bird takes its name, it is quite true that the tail of the adult in winter becomes nearly wholly ash-grey, losing in great measure the characteristic bars. I cannot, however, agree with the late Mr. Seebohm, who wrote : "The term Bar-tailed Godwit is an unfortunate one, as the tails of fully adult birds in winter plumage show scarcely any traces of bars," because the tail-coverts cover the entire tail, with the exception of just an inch at the tip, and these coverts are always strongly barred, so that the old shore-shooters who first described the species were not practically incorrect in distinguishing this species by the name Bar-tailed, in contradistinction to Black-tailed. Besides, as a rule, it is only the few central tail-feathers that lose, in this measure, their characteristic markings, and the side tail-feathers will always be found more or less strongly barred. The question next arises, is the tail moulted

in the spring?—because at this time the tail becomes strongly barred again. There is only one alternative to this taking place, and that is there must be a change in the pigment of the individual feather, the pale ash fading to white (often-times washed with chestnut) and the very faint bars becoming more strongly developed, and I am of opinion that this is what happens: certainly the tail-feathers of mature spring-plumaged males do not appear to me to be of new growth, as they are invariably worn at the tip.

Passing now to the spring plumage, we cannot resist admiring the rich chestnut-red of the adult male, which is so strikingly beautiful; and how some writers of recent date (Newton, 'Dictionary of Birds,' p. 366) have fallen into the error of describing the female as the brightest bird is surprising to me. It is hardly an exaggeration to say there is no comparison between the sexes: the rich red plumage of the underparts is peculiar to the male, the female having the feathers of the neck, thorax, and along the flanks merely barred or edged with rufous; above the rich black feathers of the male are broadly edged with chestnut-red, whilst in the female the edging is merely buff or white. The females which show only faint traces of rufous in their plumage at all at any age show scarcely any as first year's breeding birds. I took the pains to count the ova in all the females I obtained, and in a plain-coloured female, which I presumed would be a younger specimen, I found the ova to be one hundred and eight in number. In the other specimens, which were distinctly brighter, this number was not reached, which, I assumed, showed they had laid eggs and were older birds. Hardly believing that any change of plumage could take place in the female between the dates of their appearance in our estuary in May and their appearance at their breeding-station, yet wishing to make assurance doubly sure, I wrote to Mr. Leybourne Popham, who has observed this species in their breeding-haunts in Siberia, and who kindly replied as follows:—"They are (*i. e.* the male and female Bar-tailed Godwit) so totally distinct in the breeding-dress that I can only suppose your object in asking this question is because

some people have, I believe, stated that the bright-coloured bird is the female; but I found the rich chestnut-coloured bird the male, though there is a *slight* tinge of colour on the breast of the female, but nothing at all to be compared with that of the male." And, on my remarking that I had usually found the Godwit a very silent bird, he goes on to say: "The Bar-tailed Godwits are certainly not very silent on their breeding-grounds, and in the winter-time in Holland they call occasionally when on the wing, in small flocks, but not often. It is very difficult—at least I find it so—to put a bird's call accurately into words, and often no two people would write it the same; but, as near as I could get at it, their call at their nests sounded to me like 'Koo-wak,' and sometimes varied by 'Koówi-Koówi' (repeated rapidly); the latter is the one I hear in Holland in the winter." This pretty accurately describes a sound which I have heard uttered in a peculiarly squeaky tone, utterly unlike any other bird-note I know. Again, describing their behaviour at their nests Mr. Popham says: "I compare the Godwits to the Whimbrels at the Færoe Islands, especially as they shared the ground with Buffon's Skua in the same manner as the Whimbrels do with Richardson's Skuas."

Although this species is met with in numbers only at the times of migration on the south and west coasts of England, we know that flocks thousands strong frequent the bays and estuaries of the east coast north of the Humber, and also in Holland, on the opposite shores of the North Sea, all through winter. Extremes of temperature cannot, therefore, be the predisposing cause of their movement south in winter, but the reason must be sought for in their food-supply; and it would be interesting to ascertain in what way the shores of the North Sea differ from those of the English Channel in producing a food apparently to their liking. Tolerable numbers also are stated to winter on the west coast of Ireland; but the faunistic relationship as regards birds in the south-west peninsula of England is so similar to that of the south of Ireland that I suppose the number seen in the latter place in winter is small comparatively to that seen at the times of

migration, and that the numbers seen in winter bear the same relation to those seen with us at that time.

As regards the distribution of the Godwits, Seebohm gives the following hypothetical explanation in his 'Monograph of the Charadriidæ':—"Ancient routes of migration.—The Bar-tailed Godwit emigrated through Behring Straits, the ancestors of *L. fedoa* following the American coast, and those of *L. uropygialis* the Asiatic coast. The descendants of the latter gradually extended their range westwards until in post-glacial times the European examples were more or less isolated and differentiated from their Asiatic confrères and became *L. rufa*. The Black-tailed Godwits represent the party which chose the Atlantic route, the ancestors of *L. belgica* having followed the Atlantic coast of Europe. The latter gradually extended their range into Asia, and in post-glacial times the Eastern examples were more or less isolated and differentiated from their fellows, and have now become *L. melanuroides*."

That the flocks that come to us in April and those that arrive in May have wintered in degrees of longitude far apart is worthy of credence, because even when the interval of their arrival may be only a couple of weeks, yet one flock is still in winter dress (not immature only) and the other in the most perfect summer plumage. That the birds composing these flocks do not associate I have definite evidence, for in 1896 the birds that had arrived in April remained a longer time than usual, owing to a stiff easterly wind that came on and which brought us a large flock of red birds some ten days after the winter-plumaged birds had arrived. These two flocks kept entirely separate the few days they were in the estuary together, and did not associate in any way, as I had ample opportunity of ascertaining. Sometimes birds are met with singly (as a rule late in spring or during summer), of a very pale ash-grey; these are, I think, very old or sick birds, with not sufficient vitality left either to assume summer plumage or to follow the flocks to their Arctic breeding-haunts.

The Eastern representative of the Bar-tailed Godwit, on

account of its more strongly-barred rump, has been given specific distinction as *L. uropygialis*; it is found from the N.E. shores of Siberia in summer to New Zealand in winter. Its habits are similar to those of its congener in Europe, but the flocks moving up from the south are focussed to one spot, the North Cape in New Zealand, preparatory to their long flight to their breeding-grounds on each side of Behring Straits (for I am of opinion the species found in Alaska is identical with the Asiatic species), and the numbers there congregated before they take flight may be reckoned by thousands.

Coming to the New World representatives, we find some striking differences shown by *L. fedoa*, and although at first sight it is similar in general character to *L. rufa*, it requires a stretch of the imagination to believe the two had a common ancestor; but doubtless during the long ages and ages that have elapsed since the first migratory impulse arose, food and climatic influence have so modified them, that we find each species now eminently adapted to the general surroundings. It is unnecessary to give a detailed description of the plumage of *L. fedoa*, for that can be found in any good work on North-American ornithology, and there are many; but I wish to point out where this species differs from *L. rufa*. In the first place, it is no misnomer to call it the Marbled Godwit, for the barring and mottling of its dorsal plumage give it a peculiarly marbled appearance, while the underparts are pale buff, minutely spotted on the neck; and on the breast and flanks the feathers are barred with fine vermicular markings, the belly being usually free of such. In some males the barring is continued to the vent, but this is not a safe diagnostic character; and reliance must be placed on dissection or comparison, the females being invariably larger than the males. This species has no grey phase of plumage, so that, no matter if found on the lakes of Ontario or the swamps or sloughs of Florida, it is always in the same dress. It is a much larger species, and the bills of some females measure quite five and a half inches in length, whilst the

legs are longer and stouter in proportion ; the space above the tarsal joint is greater also. The Marbled Godwit or Marlin is a widely distributed species in North America, breeding in the interior on the prairies, not necessarily near water, from Iowa and Nebraska, northward to Manitoba and the Saskatchewan, whilst it migrates in winter as far south as Central America. It is well-known as the "bay-bird" among the 'longshore-men, and is conspicuous by its large size and its bay colour, especially on the axillaries. It is, in fact, the largest shore-bird excepting the Long-billed Curlew found on the mudbanks and sandy spits. In Colorado, where numbers pass through on their spring migration, they may be looked for just about the same time as we see the Bar-tailed here, namely, the first or second week in May.

Coming to the Black-tailed Godwits, we find species with well-marked distinctions in the Old and New World. They differ from the bar-tailed species in not being so eminently gregarious and not being so strictly marine in their habits ; they prefer the soft edges of the marshes and meadows, though oftentimes on migration the two species are found in company on the mudbanks.

Less than a century ago the Black-tailed Godwit, *L. belgica*, was a common breeding species in the fens of our south and south-eastern counties, but the incessant persecution to which they were subjected to on account of the delicacy of their flesh, and the gradual reclamation of the fens, has driven them from their breeding-haunts in England, and we see them now only on migration. In South-east Iceland, where the bird is known by the name of "*Jadrakan*," or Earth-raker, it breeds plentifully, also in the north of Holland and Poland, as well as other suitable places in subarctic Europe and Siberia. East of the Lena we find a smaller species, which has been separated as *L. melanuroides* ; but as there is complete intergradation in the way of size between this and *L. belgica*, its specific validity is doubtful. This intergradation exists also between *L. rufa* and *L. uropygialis* in the amount of bars and streaks on the rump ; and it seems to me a pity to assign specific rank in any case where such complete intergrading

forms exist. The school of separatists have surely gone too far in this direction, and we may not have to wait long before a reaction sets in, when the study of ornithology will be simplified in a very appreciable degree.

This smaller form breeds in summer in Eastern Siberia, and migrates in winter through China and Japan to Australia and New Zealand; the larger form is found as far south as Ceylon in winter.

The male in summer varies considerably in the tint of red on the throat and chest, some specimens obtained at the same time being much deeper in colour than others. The brightest bird I ever saw was shot on the Exe and is now in the Albert Memorial Museum, Exeter: in it the throat and breast were quite as bright a chestnut as we find in the brightest of the Bar-tailed species; but this is exceptional, the usual tint being merely reddish fawn, the feathers as they meet those of the flank becoming tipped with black, reminding one of the characteristic markings of the Hudsonian Godwit. The mantle is barred in strong contrast with black and chestnut. The female, which is always larger and has a proportionately longer bill, is paler in colour, and the strong contrast of black and chestnut on the mantle is not seen to anything like the same extent. The flanks, however, are barred with black and chestnut, as in the male, which is often so barred to the vent. The young may be known by the wing-coverts being heavily edged pale buff, which are always clear smoky ash in the adult, the edging having worn off by the following spring. The tail is black except the basal portion, which is white. The upper tail-coverts, which cover the tail excepting just an inch at the tip, are white, but black for the terminal half, so that the tail appears black to its base; while, as the bird takes flight, the white patch between the black rump and tail appears very conspicuously.

The bills of this species, as with all the family, I think, continue to develop for the first twelve months. The bills of the Black-tailed Godwits differ from those of the Bar-tailed in that the tip is slightly flattened to a spatulous shape, which is noticeable both in Old and New World species, resembling

the Snipes, whose bill is slightly flattened at the tip; but the bill is not so highly organized as in the latter family.

It is interesting to note how closely the Godwits approach the Snipes in external characteristics, as shown by the bill of the Red-breasted Snipe (*Macrorhamphus griseus*), which in its sensitive tip is like the Snipe, though its stouter basal portion shows its affinity to the Godwits; and again in its seasonal change of plumage the Red-breasted Snipe approaches the Godwits rather than the Snipes.

The Hudsonian Godwit seems to be the prototype of the Black-tailed Godwit of the Old World. This species (*L. hæmastica*) is met with generally on migration throughout the United States except west of the Rocky Mountains, and presents some interesting features. In the first place it is a dumpier bird (if I may use the expression) than the characteristic long-shanked Black-tailed Godwit of the Old World, being more like the Bar-tailed in this respect. The tail characteristics are as in the Black-tailed Godwit, but the feathers are more constantly tipped with white, and the under tail-coverts are boldly barred black and white. The black axillaries render this species unmistakable at any season. In one other respect it resembles the Bar-tailed Godwit: it has a distinct seasonal change of plumage, the sombre grey plumage of winter giving way to one of a bright chestnut on the whole of the underparts except the chin as summer advances. This change in both species is wrought not by a complete moult (only a few new feathers are produced) but by the growth of the old feather, which becomes deeply pigmented, whilst the white tips wear off, leaving a fine black line at the tip of each feather. The same change is effected in the dorsal region, the grey edging becoming worn off as the chestnut-scalloped black feathers continue to grow.

The female is larger than the male, and in summer is of a much lighter red. It is more gregarious in its habits than the Black-tailed, and in its winter-quarters is often met with in large flocks, associating with the Marbled Godwit; it breeds abundantly in the "barren lands" of the Arctic regions.

The group of Godwits, though sharply defined, show an affinity with the familiar *Gallinago* through the Red-breasted Snipe (*Macrorhamphus griseus*) and with *Totanus* through the Willet (*Symphemia semipalmata*) and the Terek Sandpiper (*Terekia cinerea*), allowing us to infer that when sharp lines of demarcation exist in families the link is only missing, dropped out, or improved upon by the survival of the fittest, adapting itself to the slow but sure changes in Nature. In fact it is impossible to avoid the conclusion, when we thus consider this group, that they have been derived from some common ancestor. It is far more difficult to speculate why certain characteristics have been retained or lost in the individual species of the two groups; but there are indications that the changes have been effected in consequence of the different breeding-haunts of the species, and it will also be found that those that wing their way farthest north have proportionately more pointed wings.

XLIII.—*The Birds of Spitsbergen, as at present determined.*

By AUBYN TREVOR-BATTYE, B.A., F.L.S., &c., Zoologist to the Conway Expedition of 1896.

I DO not think it needful to give, in this Introduction, more than an outline of the voyage to which it refers. 'The Ibis' cannot fairly be asked to concern itself with personal adventures, but rather with an account of the birds. We left Tromsö on June 15th, sighted Bear Island about one o'clock on the following day, and on the 17th inst. fell in with light scattered ice in N. lat. 76° 10'. All that day we went through the ice, sighting, towards evening, Horn Mountain and the Spitsbergen cliffs.

Upon the ice were many young harp-seals, no doubt on their migration eastward to the Siberian seas. Brünnich's Guillemots, Mandt's Black Guillemots, Fulmars, Little Auks, Arctic Terns, and one pair of Pomatorhine Skuas exhaust the birds we saw that day.

On the 18th we landed at Cape Staraschin, in Ice Fjord. In view of the contradictory statements about the Bernicle

Goose in Spitsbergen, it is not a little curious that the first bird I should meet with on the land was of this species. There is a large lake—the largest bit of inland water I saw in Spitsbergen—lying a mile or so inland from Cape Staraschin. It was still frozen over, except at one point, and on its banks a pair of Pink-footed Geese were feeding, while a pair of Red-throated Divers flew in from the sea and settled in the open water. There were Snow-Buntings, already in pairs, and several pairs of Eider Ducks (*Somateria mollissima*) on the sea. Nearer Green Harbour we came to an anchor off Festning Rock, in which several Mandt's Guillemots had eggs.

By the 20th the movements of the ice enabled us to steam into Advent Bay, where we lay in a good anchorage behind the southern point. That day we shot a pair of Grey Phalaropes and found an Arctic Tern's nest containing one egg. I left a day or two later than Sir Martin Conway, viz. on August 18th. The spots visited and referred to include Ice Fjord, North Fjord, Dickson's Bay, Horn Sound, Danes Island, Walden Island, and Wijde Bay.

A glance at the map will remind readers of this article that the western island of Spitsbergen is almost divided by two inlets of the sea:—one (Ice Fjord) running from the south northwards, and breaking itself up into various arms and entries; the other running from north southwards, and known as Wijde or Wide Bay. A large proportion of the west coast of Ice Fjord consists of glacier and bare rock, but on the opposite side are many valleys, which are green in summer and cut into by streams fed by the melting snow. In those valleys the Pink-footed Geese nest sparingly, the Purple Sandpiper abounds, and the Snow-Bunting nests in the "talus" slopes along their sides. In places the rocks are precipitous and afford nesting-sites for colonies of Brünnich's and Mandt's Guillemots, for Fulmars and Little Auks. But Ice Fjord, on the whole, is disappointing to an ornithologist. As the primary object of Sir Martin Conway's expedition was work inland, a whale-boat was sufficient for the party's needs. But a whale-boat, though adequate for conveying camp-

material from point to point, is not good for a naturalist. It is heavy and is designed to be pulled by a crew of four trained whaling-men. We had but one man : at first a young man, Carl, who hated hard work ; and later an old man, who was, moreover, suffering from lumbago during the whole of our visits to the northern inlets. The hard work therefore fell to my companion, Mr. H. E. Conway (Sir Martin Conway's cousin, artist to the expedition) and myself. As good healthy exercise we enjoyed this well enough ; but while you are labouring in the heavy seas the precious moments go by, and you finally arrive at your hunting-ground tired and not fresh. Any naturalist who may contemplate a voyage to Spitsbergen will be well advised to take a steam-launch, and thus he would (ice permitting) command any favourable points during the short breeding-season. Running into a bay he could search the valley in a single walk, and, instead of camping for rest and sleep, could be off again and miles away in a few hours at his next point. It is necessary to remember that there is all the difference in the world between a high Arctic breeding-ground and one further south. In a district of mountain, lake, and woodland, on the tundra with its streams and willow-scrub, in short, in almost any district other than that of the Spitsbergen valleys, it pays best to settle down and work one definite area thoroughly. But here there is, speaking generally, no cover, and the birds belong to the species which show. The Waders are always moving, the Geese can be seen a mile away, and though the ducks may be sitting closely, their drakes will be in evidence. This is not to say that a rapid survey is better than a close one. What I do say is this : that if, to-day, you take a general walk up one side of a Spitsbergen valley and down the other, keeping your eyes about you, examining feathers and other signs, you will have a very shrewd idea of what that valley contains. If on the following day you take a less extended walk, but go carefully and slowly, prepared for surprises and searching every spot with your glasses, you are as likely as not to see even less than on the day before. But there is

no rule without exceptions, and were I to go to Spitsbergen again and had no opportunity of working Stor Fjord, I should confine myself during the best part of the breeding-season to two districts. First I should work Van Mijen's Bay and Van Keulen Bay, and then I should run right up north and work Liefde Bay. Van Mijen's Bay is, from natural circumstances, a very favourable bird-ground, and Liefde Bay is filled with islands and has never been worked, so far as I know. In Van Mijen's Bay the Bernicle Goose probably nests, and in Liefde Bay I should expect to find the nest of the King-Eider.

Since the publication of Professor Newton's paper (Ibis, 1865, pp. 199-219 and pp. 496-525) several voyages have been made to Spitsbergen, and the results of these are incorporated where necessary in this list. I say advisedly "where necessary," for while I have not to repeat references to abundant species, I have been at the pains to read carefully all that has been written, to give the records of rarer forms, and to quote any testimony on doubtful points.

The following is a list of accounts referred to:—

1870. In the summer of this year Th. von Heuglin and Count Zeil explored East Spitsbergen:—"Reisen nach dem Nordpolarmeer in den Jahren 1870 und 1871 von M. Th. Heuglin." (3 vols.) Braunschweig, 1874.
1873. Mr. Benjamin Leigh Smith, on his third Arctic voyage, was accompanied, in the steam-yacht 'Diana,' by the Rev. A. E. Eaton, Mr. T. B. Potter, and Lieut. H. C. Chernside. Mr. Eaton was naturalist to the party, and his paper is entitled "Notes on the Fauna of Spitsbergen." Zoologist, s. s. p. 3762 and pp. 3805-3822.
1881. In this summer Mr. A. H. Cocks and Mr. Abel Chapman went on the 'Pallas' to the West Coast of Spitsbergen. Mr. Cocks's interesting account bears the title "Notes of a Naturalist on the West Coast of Spitsbergen." Zoologist, 1882*.
1882. In the autumn of this year Mr. Cocks again visited Spitsbergen on a walrus "jagt," chartered by himself and M. Charles Rabot. They left Tromsø on Aug. 26th, and returned on Oct. 7th of that year. The trip is described as "An Autumn Visit to Spitsbergen." Zoologist, 1883.

* [Mr. Abel Chapman also wrote an account of this visit. Nat. Hist. Tr. Northumb. viii. pp. 138-158.—EDD.]

1894. Col. H. W. Feilden accompanied the late Captain Townley-Parker in the s.y. 'Saide' on a short visit to Spitsbergen in this year, and wrote "A Flying Visit to Spitsbergen." Zoologist, 1895, pp. 81-90.
- 1858, 1864, 1873. Professor Nordenskiöld visited Spitsbergen in these years, and in 1873 he made his famous crossing of the ice-sheet of North-East Land. References to the birds of Spitsbergen will be found in the first volume of the Voyage of the 'Vega.' Some of these are, however, not convincing.

The following also contain references :—

- Wolley. Catalogue of Eggs, 1856, p. 17. (Occurrence of *Phalaropus fulicarius*.)
- Gould. P. Z. S. 1858, p. 354. (Description of *Lagopus hemileucurus*.)
- Evans and Sturge. Ibis, 1859, pp. 166-174*.
- Torell. Bidrag till Spitsbergens Molluskfauna, &c. Stockholm, 1859.

I have only to add that the Rev. H. H. Slater, who had collected a list of references in view of himself writing up the Spitsbergen birds, placed these with ready kindness in my hands on learning that I intended giving my observations in 'The Ibis.'

1. LINOTA HORNEMANNI, Holböll. Arctic Redpoll†.

Doubts which existed at the time of the publication of Prof. Newton's remarks (Ibis, 1865, p. 502) upon the identity of Scoresby's Spitsbergen Redpoll (Arct. Reg. i. p. 131 & p. 537) have long since been set at rest by Mr. Eaton's discovery of this large form in some numbers at Wijde Bay in 1873. He says of some of the 'Diana's' crew :—"They also found a nest upon the ground containing five eggs, blue spotted with reddish, which were possibly Redpoll's, but they may have been Snow-Bunting's. As these were hard-set, they did not bring them to me." At the same time there can be little doubt of the identity of these eggs, for the Snow-Bunting is the very last bird to nest upon the ground,

* ["Notes on the Birds of Western Spitzbergen, as observed in 1855;" an important paper, at the time. The authors brought back the bird which Gould named *Lagopus hemileucurus*.—EDD.]

† I have been guided to the adoption both of the specific and of the popular name of this northern form of the Mealy Redpoll by Prof. Newton in the 4th ed. of Yarrell.

though it often nests *in* the ground, and no more careful concealer of its nest exists. I have no other references to this bird, either by others or myself.

2. *PLECTROPHENAX NIVALIS* (Linn.). Snow-Bunting.

The Snow-Bunting has been so frequently recorded, that all it seems necessary to say here is that I found the species generally distributed in suitable nesting-spots. There were two pairs in the river delta under the Norwegian graves at Advent Bay, and a pair here and there up that valley. In Wijde Bay I saw a pair, in Dickson's Bay two, and there was quite a colony of breeding-birds in the hyperite rocks at Eckmann's Bay and near the Splendid Glacier. On August 11 there were small flocks of old and young on Oxel Island, Van Mijen's Bay.

+ 3. *NYCTEA SCANDIACA* (Linn.). Snowy Owl.

It would seem to be now established beyond challenge that the Snowy Owl must be regarded as merely a straggler to Spitsbergen. Up to the date of the publication of Prof. Newton's paper but one example had been recorded. Of voyagers who follow, Lamont mentions that one of his party shot one on Ziegler Island, Deep Bay, in August 1869. Von Heuglin did not observe it, nor did Mr. A. H. Cocks. Prof. Norden-skiöld records one killed in Wijde Bay in 1872 (Voy. 'Vega,' i. p. 131), and adds of this species: "It evidently breeds and winters at the Ptarmigan-fell." He gives, however, none of the evidence, and his conclusion may therefore fairly be questioned. Col. H. W. Feilden, who visited Spitsbergen in 1894, remarks (Zool. 1895, p. 90): "In our brief visit to Spitsbergen we obtained two specimens, saw two more, and saw traces of them." The facts in this paper discount to some extent the theory, advanced by previous writers, that the absence of the lemming explained the scarcity of the Snowy Owl, for Col. Feilden found this bird content to feed upon the Little Auk, a statement I am able to confirm from my own observations. No Snowy Owl was seen last year, either by myself or by any of our party. No country could offer a greater advantage of nesting-sites for this species than

Spitsbergen; but I never succeeded in all my wanderings in finding a spot where castings were lying in any great quantity, nor any that seemed more than two or three seasons old. In this respect the vantage-points strikingly differed from those I have examined either in Northern Canada or in Kolguev. From the above it is, I think, a fair inference that in Spitsbergen the Snowy Owl is only—and very—sporadic*.

4. *FALCO*, sp.

I regret to say that I am personally unable to contribute any evidence as to the existence of a Spitsbergen Falcon, although the testimony of former writers points to a consensus of conviction in favour of the bird. Malmgren, indeed, went so far as to assert that the bird he saw was neither *Falco candicans* nor *F. islandus*, but *F. gyrfalco*. Von Heuglin has nothing to say at first-hand, but was assured by a Norwegian skipper that a Falcon was frequently observed by him in Ice Fjord in the summer of 1870. But perhaps the most expert, as well as the most positive, testimony is that of Mr. Abel Chapman and Mr. A. H. Cocks. The former observed “a large long-winged Falcon” soaring high over the water at Van Keulen Bay on July 30. At Recherche Bay Mr. Chapman says they “had a good view of a Gyrfalcon, which species I cannot say positively, but it looked white enough for *F. candicans*.” And in the same account, “a Falcon was seen by Arnesen and some of the men when we were at the Swedish Meteorological Station at Cape Thordsen on Sept. 12th, stooping at one of the tame Pigeons brought out by the expedition [*i. e.* the Swedish Expedition under Nordenskiöld]. They succeeded in saving the Pigeon by shouting and waving their arms.”

5. ANSER BRACHYRHYNCHUS (Baill.). Pink-footed Goose.

The Pink-footed Goose is distributed thinly, but generally, over a great part, at any rate, of Spitsbergen. Its breeding-habits do not differ, so far as my observation goes, from those of *A. erythropus* or *A. segetum*. Like these birds, it seldom, on the mainland, nests by the sea, but retires inland,

* [Mr. Arnold Pike records its occurrence on five occasions. See his diary, in Chapman's ‘Wild Norway,’ pp. 343–350.—EDD.]

and chooses for its nest some elevated point overlooking a stream or lake. Occasionally it nests upon small islands, and a female bird, with its nest, eggs, and the surrounding turf, now in the National Collection, was obtained by me on a small island off Cape Boheman, in Ice Fjord, on June 26th; the three eggs being then slightly incubated. This was the only pair of Geese upon the island. I shot the female as she flew off the nest, and the male for some time displayed great solicitude, swimming round and round and calling incessantly, but never came within shot. On June 20th these Geese had not quite scattered: for example, two flocks, of 22 and 14 respectively, flew up on that day to the head of Advent Bay; but these were very late birds. On July 24th two broods of young were running with their parents near the Splendid Glacier. Both these broods were in an advanced state of *grey*—not yellow—down. I am able to support the statement already made by Mr. Abel Chapman and Mr. A. H. Cocks to the effect that this Goose moults earlier than the Brent. Indeed, this probably also holds true of their respective genera; for I have already shown ('Ice-bound on Kolguev,' p. 423) that Bean and White-fronted Geese are both able to fly when the primaries of the Brent are only just starting to grow. There is also a point of habit in which, in my experience, Brents and "Grey" Geese differ. When a flock of Brent Geese are disturbed upon the land with their young, they make with all speed for the sea. "Grey" Geese, on the other hand—or, at all events, *A. erythropus*, *A. segetum*, and *A. brachyrhynchus*, the species which I have had the opportunity of observing—seek the sea reluctantly and only do so when they are, or think they are, "cornered." I have elsewhere (*ibid.* p. 221) described the way in which a Bean Goose will run along and then squat with its neck stretched straight out along the ground, exactly in the attitude assumed by the Thick-knee or Norfolk Plover. The Pink-footed Geese of Spitsbergen behave in the same way, if they have their young with them. Provided the ground is not too steep, they run for long distances, sometimes even along the edge of the water without entering it. Pink-footed Geese are remarkably quick upon

their legs, and the young birds when half-grown can run as fast as the old ones; the latter, if hurried, run with outstretched wings, which hinder them against the wind, but if too closely pressed, the goose, which leads (the gander brings up the rear), will suddenly drop, and the whole party follow her example. You can then walk up and look at them lying there, all in precisely the same attitude, with bodies flattened down and necks outstretched on the ground, so that you must stir them up in order to start them off again. The nest is well guarded by the gander, who will leave his sentry-post and walk round and round the sitting goose on a little track made by his steps, resenting your intrusion by a continued series of short sharp notes, not unlike those of the Brent.

+6. BERNICLA BRENDA (Pall.). Brent Goose.

I did not personally find any evidence of the immense numbers in which this species has been described as breeding in Spitsbergen, but no doubt there are a fair number scattered about over the small islands, although there were actually none on those which I visited off Cape Boheman, nor on the two islands of the Flower Garden, Cape Wijk; while on the Goose Islands there was not a Goose or a Duck, but there was a fine family of foxes. Further, when the nesting was over, instead of the vast numbers of these birds which I had expected to find on the sea, I only saw two lots*. One lot, about 40 in number, unable to fly, I moved off the beach under the snow-fort in Lost Island Bay on July 27th, and on July 22nd saw a lot of about 25 in Dickson's Bay. I was entangled in the ice at the time, the boat being entrapped between the old "bay"-ice and large rough hummocks of glacier- and floe-ice which had drifted in from Ice Fjord. These Brents were standing about round the blow-holes of the great seals (*Phoca barbata*), of which very many were lying on the ice. They were, perhaps, half a mile off when I first noticed them, and almost immediately set off running straight towards my boat. Peterson and I

* ["A skein of two hundred Brents passed south." Smeerenberg Bay, Aug. 26th: *A. Pike*.—EDD.]

were having a hard struggle with the ice, and were therefore in constant motion; but the only bit of open water lay beyond us, and the Geese were evidently set on making this, for they passed us within 20 yards, running with outstretched wings over the smooth bay-ice, the seals opening their mouths at them as they passed, and dropping in among the floes.

Nordenskiöld, referring to this bird, speaks (i. p. 125) of its "artless nest *without down*," as contrasted with "the Eider's nests, rich in down." This, of course, is a mistake. Nordenskiöld probably noticed the nest of a bird which had only just done laying and had not begun to sit.

I trust I shall not be considered captious if I here correct, as I suppose, an error which crept into Mr. Eaton's paper. "This bird goes by the name of 'Rein-Goose' in Spitsbergen" (Zool. 1874, pp. 3814, 3815), he says, and proceeds to find a reason for this in the supposition that others may, by fog or mirage, have been deceived, as the 'Diana's' crew were, into mistaking Brent Geese for reindeer. Of course the word is not Rein-Goose at all; it is "Ring-gaas," *i. e.* "Ring-Goose."

+ 7. BERNICLA LEUCOPSIS (Bechstein). Bernicle Goose.

Professor Newton, writing in 1865, was unable to assure himself that this species had been correctly reported from Spitsbergen. But there can be, I think, no doubt whatever that the bird is a regular summer visitor to that country; and a short review of the subsequent evidence upon which this conclusion is based may not be out of place.

Von Heuglin says that Dr. Smitt, in 1868, obtained one in the inner part of Advent Bay.

Mr. Eaton, July 22nd, 1873, obtained seven examples out of a flock of "a dozen or more" from a lakelet in the hills opposite Diana Island, and describes the occasion with much circumstance.

Mr. Lamont has described ('Yachting in Arctic Seas,' pp. 284, 285) how he succeeded in killing "a hundred" from "a pond a little in-shore at the end of Advent Bay" in July 1875. Startling as this sounds, I entirely agree with the opinion Col. Feilden has expressed (Zool., March 1895), that so experienced a sportsman and so good a

field-naturalist as Mr. Lamont was little likely to confuse Bernicles with Brents, especially since he expressly states that there were large flocks of *both* species round his pond.

Lieut. Stjemspetz informed Mr. A. H. Cocks that "the members of the Swedish Geological Expedition [of 1882] had shot two adult birds of this species in Bell Sound, and had taken three young ones alive" (*ibid.* 1884, p. 16).

To this I may repeat that by a curious chance the first bird I saw on the land was a Bernicle Goose. This was on June 18th at Point Staraschin. E. J. Garwood, H. E. Conway, and I were being pulled ashore, and when within forty yards of our landing-place a Bernicle Goose suddenly appeared standing on a ridge of snow on the edge of the cliff, which is here some eight feet in height. While I was snatching up and loading my gun it took wing, and, firing a long shot at it, I missed. On June 30th I came upon seven in the marshes at the head of Advent Bay. On that day Dr. Gregory and I were engaged with sleighs conveying provisions up that valley to a point where Sir Martin Conway was encamped. The nature of the ground made it unwise to leave the ponies for more than a moment or two, so I only had a hurried try for these birds, which rose wildly out of shot. Later on I saw a party of nine Bernicles flying low over the ice of Advent Bay*.

Skipper Svendsen, owner of the walrus "jagt" 'Jasai,' of Tranö, with whom I visited the island, mentioned before, has a very quick eye for the differences in birds. He is engaged with his brother in white-whale and shark-catching, and his words most curiously recalled an account which I remember to have read (but cannot now find) of a Norwegian skipper who described "White-winged Geese" in Bell Sound. Svendsen spoke of them as "White-winged," sometimes as "White-faced" Geese, and said that he saw them every year when he first came up, and that in the spring of 1895 there were about 300 in a lot in Bell Sound, but that he had never been able to find the nest of this species.

* [Mr. Pike mentions six Bernicle Geese at Stor Fjord on May 30th.—EDD.]

8. *SOMATERIA MOLLISSIMA* (Linn.). Common Eider.

The Common Eider is, of course, generally distributed on the islands of Spitsbergen. I only once found them nesting on the mainland, when, at the foot of the Splendid Glacier, I met with two nests formed entirely of *Andromeda tetragona*, and each containing three eggs. At the "goose islands" in Ice Fjord, where Eiders and Geese once bred in large numbers, not a goose or duck was to be found last year; for foxes had crossed in the winter and had two thriving litters. When Mr. H. E. Conway and I were in camp at the Flower Garden we had two Eider islands within a few yards of our tent, which were a constant interest to us. The birds were absurdly tame, and we used to sit among them and sketch. If we approached a sitting duck too closely she would often cover up her eggs very deliberately before she moved off. If, however, an Eider (or for that matter a Long-tailed Duck) is driven hurriedly off her eggs she *invariably* squirts over them a stinking fluid. I cannot understand why this has been disputed, for even if the fluid should miss the eggs themselves some will most certainly be found on the down of the nest, as every down-collector knows to his cost.

- 9. *SOMATERIA SPECTABILIS* (Linn.). King-Eider.

The question of the breeding or not of the King-Eider in Spitsbergen has not yet been settled, but as a visitor to that country the bird has long been known. With the exception of two examples killed by Prof. Nordenskiöld on the south-east coast in 1858, and one by Dr. Malmgren in Safe Haven in 1864 (see Newton, *Ibis*, 1865, p. 516), I do not find any record of examples actually obtained until that presently to be mentioned as killed by one of our party last year. The King-Eider seems to have a more northerly range in Spitsbergen than was supposed, for Mr. Eaton has a note (*Zool.* 1874, p. 3817) upon this species:—"None were shot; but Lieut. Chermiside said he saw some at South Gat, Wijde Bay, and Lomme Bay."

Personally, I have seen them only in Advent Bay. In the week of June 20th-28th several small companies of

King-Eiders flew with each low tide from the sea to the marshes at the head of Advent Bay, where they fed among the Common Eiders, who also resorted there. If disturbed they would fly round mixed in a flock with the Common Eiders, but would presently separate and settle by themselves. On June 21st Studley and I walked a long way up the south shore of Advent Bay till we reached the marshes at the head. We saw there "many hundreds of Common Eiders and a fair sprinkling of King-Eiders"; perhaps we saw a hundred King-Eiders in all. They were hard to approach because of the creeks, but I missed badly a splendid old drake which flew round within shot while I was trying to balance myself on the only sound lump of grass in a bad place. On June 25th Studley killed a drake King-Eider off the sea in beautiful plumage, and on the same day I killed a duck of this species. I find no entries about the species after June 28th.

10. *HARELDA GLACIALIS* (Linn.). Long-tailed Duck.

Reference to the writings of other observers goes to show that this species is more abundant in Spitsbergen than my own observation has led me to suppose. Von Heuglin says: "We have seen it on Dun Island, Ice Island, and Ice Fjord." He adds that "it frequents the rocks of fresh-water lakes, and flies in dense flocks, chiefly of males, low over the sea." The first remark is probably a general reference to the habits of the species; and the last no doubt refers to Malmgren's observation, in 1864, of a family-party of five "on a small pool of fresh water on one of the Horn Sound Islands." Malmgren reports four others, including a pair as far north as 80°, of which the male went to the Stockholm Museum. This I take from Prof. Newton's paper (*Ibis*, 1865, p. 515). Mr. Cocks says (*Zool.* 1884, p. 15): "Three ducks flying in Recherche Bay on Sept. 22nd were without much doubt of this species, but they did not come close enough to identify with certainty." Mr. Eaton says (*Zool.* 1874, p. 3816): "This duck occurred in King's, Wijde, Neurenberg, and Lomme Bays. In the first of these localities

a duck and drake were shot right and left by Lieut. Cherm-side, but only the duck was secured."

Personally, I saw but one individual of this species—a duck sitting out of shot among a lot of Common Eiders on the beach of Losh Island Bay on July 27th. I tried to stalk her, but she left the Eiders, dropped into the water, and swam rapidly off.

+ 11. *LAGOPUS HEMILEUCURUS*, Gould. Ptarmigan.

I notice that three writers, viz. Nordenskiöld (Voy. 'Vega,' i. p. 130) and Messrs. Evans and Sturge (Ibis, 1859, p. 169), have spoken of this bird as if it were more abundant on Spitsbergen than I found it. I should describe it as very thinly scattered over the country. I have walked for many days continuously high up on the bluffs, which form its favourite resort, without seeing a single individual. In the beginning of June, on our first landing, a white male bird was shot, but thereafter I did not see one which was not in so advanced a state of moult that the greatest possible care in skinning was necessary. It is, however, right to add that I left on Aug. 18th, before these birds would have completed their winter moult. The crop of a male bird I shot on the way to Sassendal on June 23rd was filled with grass-seeds.

All the examples what I met with were very tame. This bird has one habit which is, I think, worth noticing. When disturbed on a lower level it will fly straight off to the hill-side, and there it at first behaves in a restless manner, flying a short distance from point to point, and each time on settling turning itself round, much as a male pigeon does when courting. It then flies a few yards, settles again, and turns round. Finally, after it has repeated this performance some half a dozen times or so, it settles and remains absolutely still, not even moving its head. I saw several birds do this, and though I watched them through a strong glass for many minutes, I never could detect the smallest movement: they looked like bits of light-coloured rock. After they have taken this motionless attitude they do not move again, in my experience, so long as you are in sight—unless, of course, you deliberately go and put them up.

I cannot attempt to explain the distribution of the Ptarmigan on Spitsbergen. Sir Martin Conway's party, when they crossed from Advent Bay to Stor Fjord and again on the return journey by way of Sassendal, saw little of this bird. At the same time there are undoubtedly places in Spitsbergen where those birds are, after the breeding-season, more numerous, as the following quotation from Nordenskiöld's narrative goes to show (*Voy. 'Vega,' i. p. 130*):—"On Spitsbergen the bird had only been found before 1872 in single specimens, but in that year, to our glad surprise, we discovered an actual Ptarmigan-fell in the neighbourhood of our winter colony, immediately north of the 80th degree of latitude. It formed the haunt of probably a thousand birds." Nordenskiöld makes, however, no claim to be regarded as an ornithologist, as various inaccuracies in his description show. And the remark which follows—"They probably breed under stones in summer,"—cannot be accepted without proof. I at any rate found several old nests and one of the year with broken shells, placed in the open in the ordinary Lagopode manner.

12. *ÆGIALITES HIATICULA* (Linn.). Ringed Plover.

Only three specimens of the Ringed Plover had apparently been obtained upon Spitsbergen before my visit, and to these I am able to add a fourth. Perhaps I may be allowed here to quote from Prof. Newton's paper (*Ibis*, 1865, p. 504) on the former:—"Sir James Ross states that a bird of this species was killed by Mr. M'Cormick in Hecla Cove; and it may be inferred from what he says that General Sabine also obtained a specimen in Spitsbergen. Dr. Malmgren mentions that Professors Torell and Nordenskiöld found on one of the Seven Islands in lat. 80° 45' N. a brood of Ringed Plovers, which had probably been bred on one of these, the most northern islets of the known world. An old bird was killed from it and is now in the Stockholm Museum." Prof. Newton adds that it was not observed by any of his party, nor had been seen the year before by the Swedish Expedition.

Mr. Eaton remarks (*Zool.* 1874, p. 3809) that "Lieut.

Chermside saw a Ringed Plover in Wijde Bay, which attempted to entice him away by shamming lameness, as if its nest was close at hand."

One example was seen by our party last year. This, a female, was shot in Advent Bay by Mr. Studley on June 17th, and is now in the National Collection.

+13. *STREPSILAS INTERPRES* (Linn.). Turnstone.

There is no doubt that the Turnstone is an occasional visitor to Spitsbergen, although visitors to that land have been exceedingly unlucky in obtaining specimens. The only recorded example I can meet with is that of Mr. Alfred Cocks: "I shot a single specimen in Is Fjord on Aug. 23rd" (Zool. 1882, p. 408). Prof. Newton believed he saw Turnstones in Is Fjord, and I saw a single example last year flying low over the sea within two yards of my boat on July 29th.

+14. *PHALAROPUS FULICARIUS*, Linn. Grey Phalarope.

The Grey Phalarope has been referred to by many visitors to Spitsbergen, but it is evidently very sparingly scattered. Von Heuglin makes the same curious remark about this species as of one or two others: "It certainly prefers to sojourn on rocky islands, with moorlands, containing fens and pools, rather than on the mainland." What can this mean, and where are such islands off Spitsbergen? Even the group of large islands to the north-west do not correspond to this description, nor is it from there that the Grey Phalarope has been reported.

Of course the bird on Spitsbergen, as elsewhere, frequents any appropriate swampy ground. I was unlucky in not finding eggs; unfortunately we shot in Advent Bay, on June 23rd, a pair that would have bred, and these are in the National Collection. Their stomachs contained mosquito larvæ. On July 3rd, 1894, Col. H. W. Feilden saw two pairs in Green Harbour, and was fortunate enough to find a nest containing two eggs. "The male bird was on the nest" (Zool. 1895, p. 88).

+15. *TRINGA STRIATA*, Linn. Purple Sandpiper.

This little Sandpiper is extremely abundant in Spitsbergen

and is generally distributed. I even saw one pair on Walden Island, near the Seven Islands, in about N. lat. $80^{\circ} 40'$. It nests on almost every conceivable kind of ground, from the turf-ridges round low and swampy hollows to high up on the mountain sides. Those I obtained off the eggs themselves were, with one exception, male birds; and there can be no doubt that the greater part of the hatching is done by the male. This is probably true of the Sandpipers generally. The Purple Sandpiper, though (for a Sandpiper) clumsy in shape, has many of the pretty habits of its allied species—the habit, for instance, when at rest, of raising one wing at a time and holding it fully extended straight up in the air. Like all Sandpipers, they do much of their courtship on the wing, chasing one another in circles with rapid turns and shifts. On the ground I have seen the male bird approach the female with trailing wings, arched back, and head low down, occasionally hopping, like a courting pigeon. It is usual for writers to speak of the nest of this wader, and of that of the Waders generally, as a “shallow depression.” As a matter of fact the nest of the Purple Sandpiper (of the Little Stint, Dunlin, and some others) would be better described as a “deep cup.” The nest now shown in the National Collection, which I removed with its surroundings from Advent Bay, was a deep cup containing many dead leaves of *Salix polaris* *. Mr. Arnold Pike has a note for Oct. 5th: “Purple Sandpiper still here” (Danes Island).

16. *CALIDRIS ARENARIA* (Linn.). Sanderling.

It has been reserved for my friend Mr. Arnold Pike to have

* The statement is made (in Yarrell, 4th ed. iii. p. 411) that in Spitsbergen the nest of this bird is lined with the leaves of *Betula nana*. Those noticed were almost certainly the leaves of *Salix polaris*. The creeping birch is so exceedingly rare in Spitsbergen that I failed to find an example; and Baron de Geer, on whose report for 1895 the single record of this plant was made, was himself unable to find the plant when there last year.

[Saunders took the above from Messrs. Evans and Sturge, who say (p. 171):—“Beautiful little nests they were, deep in the ground, and lined with stalks of grass and leaves of the Dwarf Birch (*Betula nana*, L.).”—EDD.]

the distinction of being the first, as I believe, to record the Sanderling from Spitsbergen. Mr. Abel Chapman is sponsor for the identification of the species, as the following note shows :—

“ Aug. 21st, Amsterdam Island. Shot a Sanderling out of a flight of three [skin in my possession.—A. C.].”

It is certainly not a little remarkable that this bird, which nests up to 82° 33' in Smith Sound, and whose known range includes Novaya Zemlya, should hitherto never have been even hinted at as observed by any naturalist in Spitsbergen.

By the end of August these birds were already in large flocks of old and young.

†17. *STERNA MACRURA*, Naum. Arctic Tern.

Upon Spitsbergen this species is abundant and, so far as my observations go, generally distributed. But I never came upon any place where these birds were nesting in large colonies. Three pairs at the most would occupy one part of a beach, and their nests would be far apart; then at the distance of a mile or so you might come upon a pair or two more. Thus there were five pairs in all nesting on the southern beaches of Advent Bay. One of these pairs had a nest containing a single egg on June 20th. A pair of Arctic Terns were for several days very anxious to nest within a few paces of our large group of tents, and were little disturbed by passers, only flying off for a few yards and then returning to the spot, where they made many false nests. The Arctic Tern, when preparing its nest, works with both the shoulders, using its feet only as a pivot. After turning round and scooping thus, it rests for a little without leaving the nest, and employs the time in picking with its bill at the ground near. On moving the bird after one of these resting-spells, I have found little stones and bits of shells in the bottom of the nest. I had formerly supposed that these and the small bits of seaweed occasionally seen in a Tern's nest were there by chance, but I am not sure now that they are not put there by deliberate act.

I do not think that the Skuas often succeed in robbing an

Arctic Tern's nest. Our pairs of Terns in Advent Bay did all the fishing in the neighbourhood of the nest, and the appearance of a Skua within half a mile was the signal for attack. Neither an Arctic nor a Buffon's Skua has a chance with a pair of Arctic Terns.

The Arctic Terns have a habit which I have elsewhere described * of *Sterna minuta* as observed in Norfolk; but the account so exactly fits the Arctic Terns that I may be forgiven perhaps for repeating it here: "Returned from its quest the bird, with a fish in its bill, circles round and round and lower and lower over its mate, and presently drops down beside her. Then he begins a series of extraordinary evolutions. With head thrown back, wings drooping, and tail cocked straight up, he struts—no other word expresses it—about in front of his mate. The attitude, a most comical one, is exactly that assumed by the 'Laughing Jackass' Kingfisher when laughing. He jumps at his mate as if daring her to take the fish. Then he will fly round for a bit, only to settle again and repeat the play."

I think this bird feeds largely on pteropods: the stomach of one I dissected was full of these.

+18. PAGOPHILA EBURNEA (Phipps). Ivory Gull.

The presence of ice has some attraction for the Ivory Gull. It may be said indeed to go and come with the ice. To-day if the sea near your camping-ground is clear of ice, not an Ivory Gull will be seen; if to-morrow brings the drift-ice, with it come the Ivory Gulls. I expect the explanation will be found in the fact that this truly arctic species is greatly dependent upon seals' "leavings" of different sorts.

I did not at any point of our landing find a breeding-place of the Ivory Gull; but of course several such places have been recorded. Thus Dr. Malmgren, quoted by Prof. Newton (*Ibis*, 1865, p. 587), describes a colony on the north shore of Murchison Bay and Hinlopen Strait; Mr. Eaton mentions colonies in Wijde Bay and Lomme Bay; while Prof. Robert Collett contributed an interesting paper (*Ibis*,

* Paper called "In Norfolk by the Sea," in 'Pictures in Prose,' 1894.

1888, p. 410) on a colony found by Capt. Johannsen on an island off Cape Smith, 80° 9' N. lat. These birds were breeding there, from 50 to 75 pairs, "close to or only a short way above high-water mark, on low-lying ground, like *L. canus*, *L. fuscus*, &c., and not on the cliffs," where, however, their breeding-place has usually been described.

Ivory Gulls occasionally visited Advent Bay, apparently coming from Stor Fjord and following the passes through the hills, to feed on a heap of dead reindeer. The Ivory Gull may be identified, even in a bad light and at a long distance, by its clean-cut wings, long tail, and especially by its Tern-like flight.

+ 19. *LARUS GLAUCUS*, Fabr. Glaucous Gull.

Of this extremely abundant Spitsbergen bird it is necessary for me to say little. I would only remark upon the curious scarcity of immature individuals. With the exception of one immature bird brought from Danes Island by an excursionist (which, from the light character of the markings, I judged to be in second-year plumage), I did not in all my wanderings see a single example until August 18th, when three birds, evidently in plumage of the first year, flew round our boat in Horn Sound, one of which I shot and preserved. I remarked the same fact upon Kolguev Island. I presume immature birds keep to lower latitudes than breeding birds.

+ 20. *RISSA TRIDACTYLA* (Linn.). Kittiwake.

Much has been written upon the Kittiwake "rookeries" of Spitsbergen, and I have nothing to add.

+ 21. *STERCORARIUS POMATORHINUS* (Temm.). Pomatorhine Skua.

This Skua is exceedingly rare on Spitsbergen. I did not see a single example. Mr. Eaton is worth quoting at length in this connection (Zool. s. s. p. 3812):—

"The first Skua in the list was the last species obtained by us. The chief engineer, Mr. William Forbes, shot it for me near Cape Oetker, in Hinlopen Straits, on the 13th of August. Five others were afterwards killed by our men in the same

neighbourhood, some of them in immature plumage ; and we could have obtained almost as many as we pleased when we were lying off Low Land *. They are scarce on the western coast of Spitsbergen ; only one was seen by us in Magdalena Bay, and that was on the 6th of September or thereabouts. On the 13th and the 15th of September I saw a few on and near Hope Island."

Mr. Eaton was singularly fortunate. With the exception of a doubtful one in Sassen Bay, referred to by Prof. Newton, I cannot find any other references of any moment. On Bear Island the bird is abundant enough ; and I can only suppose it is a sporadic visitor to Spitsbergen. I passed the points to which Mr. Eaton refers without seeing a specimen, and this was not for want of a constant and keen look-out. I may observe, too, that the "lumpy" appearance of this bird's twisted tail is easily noticeable even at a considerable distance, as I have elsewhere repeatedly proved ; so that no observer of even average experience could fail to identify the species.

22. *STERCORARIUS CREPIDATUS* (Gmelin). Arctic Skua.

This bird is quite common in Spitsbergen. Dr. Malmgren distinguishes it from the Scandinavian form by "a notably smaller bill, a blacker back and head, with a broad ashy-grey band across the upper part of the breast" (see Newton, *Ibis*, 1865, p. 510). This must be true, on so good an authority. I have no Norwegian specimens by me ; but I have several from Kolguev Island which do not differ in the above respects from those I obtained on Spitsbergen.

I may mention that I obtained from Axel Island, where it was nesting, the first example of the dark form known as "Richardson's Skua" recorded from Spitsbergen. It is now in the National Collection.

23. *STERCORARIUS PARASITICUS* (Linn.). Buffon's Skua.

Buffon's Skua is, I think, quite as abundant upon Spitsbergen as the last species. The birds were astonishingly bold, hanging round the camp for chance morsels. We caught

* By this he means, I take it, the coast of New Friesland.

one or two in muffled toothed traps. One of these settled down at once and fed readily. When I was alone in Dickson's Bay two pairs nesting there were astonishingly valiant. Each time I passed their nesting-ground they set at me, not stooping from a height as a Gull does, but each in turn coming straight at one's face with a long wing-stroke and a rapid level flight, so that it demanded some little resolution not to duck one's head. But when about a yard from my face they always "threw up" and passed over my head with a wind, and so close that I touched them on several occasions with my hand. Each bird kept crying incessantly until the moment came for the straight fly-in, and then it stopped and came on silently.

The Norwegians call this bird "küvia" or "tjuvo," from its call.

+ 24. *FULMARUS GLACIALIS* (Linn.). Fulmar Petrel.

Mariners have clustered I know not what superstitious about this uncanny bird. The first impression it must make upon a voyager to Northern seas is of a voiceless, tireless presence, going on hour after hour, with round anxious eyes, like some brooding Genius looking for lost souls—or bodies. But in the neighbourhood of a nesting colony—*e. g.* under the Capitolium in Eckman Bay, where numbers nest—it is a very different bird. Here, especially in fine weather, numbers of them are always on the water and washing constantly. I know of no bird that prolongs its bath as the Fulmar does; and while this is going on they are so engrossed as to allow a boat's nose almost to touch them before they move away. Old Petterson, my companion, always maintained that it was very necessary for it to wash: it was "such a dirty bird." Foreigners are said on the same grounds to have given a similar character to Englishmen.

I cannot find any reference to the Fulmar's voice. I have never heard it make any sound when on the wing, but when at rest on the water in quiet weather it frequently utters a complacent croak. Scoresby, as quoted in Yarrell, refers to a "chuckling" sound induced by guzzling. A white whale which we killed and skinned was rapidly devoured by Glaucous

Gulls and Fulmars; and as the Fulmar fed this sound was very noticeable. The Fulmars which contested morsels with the Glaucous Gulls almost always, to my surprise, came off victors. Colonel Feilden has mentioned (Zool. 1895, p. 85), as a new observation, that Fulmars in Advent Bay flew over the land along the shore-line. I frequently saw them well inland. I have seen a pair of Fulmars (where none nest) flying low down round and round the "Bastion"—a glacier-encircled rock where Garwood and I had our camp under Horn Mountain—for two hours at a time, and apparently with no purpose whatever beyond the fun of flying. I have seen during a whole morning a ceaseless stream of Fulmars moving up an inland valley, on their way across Spitsbergen from Sassen Bay to Stor Fjord. And I have seen, on a fine morning, in Eckman Bay, every Fulmar—and there must have been two hundred—on the water suddenly rise high in the air, and after wheeling round, like Rooks, disappear over the mountains in a north-easterly direction.

I cannot understand the writer who says (Yarrell, 4th ed. iv. p. 6): "Round Spitsbergen both forms are very numerous, and the light one breeds in thousands on some of the islands."* I may say at once that I have never seen any Fulmar whose breast was "white" as a Gull's is white; and most certainly, of the thousands I saw last year, the "white" parts of not one could be described even by courtesy as anything better than a "dirty light shade." I was constantly looking out for light examples, and the very lightest I saw I shot, and it is now in the National Collection, where it can speak for itself.

In illustration of the power of flight of the Fulmar, I may quote the following from my diary under date July 12, *à propos* of a very severe gale:—"Many Kittiwakes were sitting on shore afraid of the weather. The Guillemots, Little Auks, and Fulmars quite indifferent. Only the Fulmars could fly against it, flying low and running along on the waves. The Auks rising remained in the same place, and the Guillemots barely made any headway."

* [Saunders is responsible for this statement: he took it from Malmgren and others.—EDD.]

— 25. *URIA BRUENNICHI*, E. Sabine. Brünnich's Guillemot.

The loomerics of Spitsbergen have been the subject of so much writing that I can add little with advantage. The most interesting loomery, though one of the smallest I saw, was at Hyperit Hat, on the eastern shore of Ice Fjord. The site when I visited it on July 7th was shared by a few pairs of Mandt's Guillemots, Little Auks, and a single pair of Glaucous Gulls. The Brünnich's Guillemots were so situated that by mounting an adjacent bank I could look on to their ledges from a few yards' distance; and I wish to say deliberately that Brünnich's Guillemot does not invariably sit upon its eggs in the upright attitude of the pictures, but often at such an angle, leaning forward over the egg, that its weight must be heavily thrown on to the egg itself. The position of the incubation-mark on a nesting Guillemot, though so low down, does not negative the possibility of this. Each bird as it returns from the sea is received with clamour by its own section, so to say, of the colony, and is not allowed to settle (for quarters are limited) except under protest. A bird is indeed often baffled more than once, and has to fly round and try again; and I repeatedly saw cases where a Guillemot which was leaning low over its egg rose to an erect posture to repel an intruder (and in this position its egg became barely visible), and after an interval settled down again.

While the ice remained about the lower entries of Ice Fjord great numbers of Brünnich's Guillemots were there, and their movements are rhythmical. While the tide was making or at flood they kept out among the ice. Then I have often approached them so closely in a whale-boat that as they dived they could be followed by the eye for many feet in the clear water. They dive very deeply and far, often going almost perpendicularly down by the side of a floe, which would be some ten feet or so in thickness and perhaps six or seven yards across, and reappearing on exactly the opposite side. As the tide ran out they would leave the open sea and fly up in close flights to the heads of the bays, where they caught the little Arctic cod (*Boreagadus fabricii*, the "Is murt" of the Norwegians). With a single exception (taken out of a

charr's throat) all my specimens of this fish (about 5 inches long) were dropped by Guillemots when shot.

I have but one other remark to make. On Wednesday, August 5th, we were steaming slowly in the launch past Coal Bay, through a slightly broken sea. I was standing on deck with Conway, explaining to him the difference between the Common and Brünnich's Guillemot, many of the latter being then round us accompanied by their young. We passed one of these within a few yards, when I noticed that its young one was sitting on its back. I had barely time to call my companion's attention to this when the bird dived, old and young disappearing, not instantaneously but the old bird first, leaving the young one for an instant solitary, which then followed her example. Again, perhaps a quarter of an hour after this, a Guillemot whose young one was swimming close to her side, as they do, touching her suddenly, seemed to sink herself low in the water, and the next moment her young was on her back. The boat was then perhaps ten yards off, and two seconds or so after the birds had gone down.

Mr. Pike has a note which shows how early these and the bird next mentioned return to Spitsbergen:—"Jan. 11th. Saw Tystie on water and heard Eiders and Brünnich's Guillemots crying and diving close inshore" (in Chapman's 'Wild Norway,' p. 346).

Nordenskiöld remarks that Brünnich's Guillemot flies "heavily and ill." As a matter of fact, it is perhaps the fastest-flying of all Arctic birds.

† 26. *URIA MANDTII*, Licht. Mandt's Guillemot.

Who has been to the Arctic regions and not developed an affection for the little Tystie, so often the only companion of his solitude? This Guillemot nests farther inland than any other sea-bird in Spitsbergen except the Little Auk. It nests with equal unconcern within reach of the hand in chinks of the low rocks or miles inland high up in the inaccessible ridges of a mountain peak. There is nothing defiant or suspecting in the Tystie's character, but it is confiding and somehow always associates itself in one's recollections with sunshine and

stillness. This beautiful bird has a pretty habit of dipping its bill into the water at frequent intervals: not that it drinks or eats when so doing, for it does not; I think it is just a little wanton trick, out of sheer happiness.

It may be worth mentioning that the Guillemots use a foot when turning suddenly in the air, as a scull is used in "backing water." I daresay other birds do the same (I think I have noticed it in the Mallard, and I am sure I have in the Razorbill); but the Tystie, with its bright-coloured legs and confiding habits, offers so good a chance of observation that one may remark the habit a hundred times a day.

+ 27. *MERGULUS ALLE* (Linn.). Little Auk.

Mr. Pike noticed Little Auks on their arrival in Dane's Gat for the first time on March 28th, and the latest date on which he observed them was October 13th. I obtained the young in Wijde Bay on August 9th, but these were then at least a fortnight old. Many of the Little Auks during nesting-time appeared to have the mumps; but examination showed that this was due to a collection of food, chiefly shrimps (or *Gammarus*), which the bird retained in its mouth, no doubt for its young. These birds breed as far inland as the Tystie. They even nest high up on the glacier-set Horn Mountain. As Garwood and I were descending from our climb of this peak on August 17th, while still at about 3000 feet, a single Little Auk—apparently the last left—flew round and round just below us as we looked down over an *arête*, evidently very anxious for its young. As it flew it made a twittering noise. On the sea it frequently in fine weather makes "a noise like a dabchick," as I find in my notes. I may mention, though I cannot explain the fact, that round the freshwater lakes where the Red-throated Divers bred, at the Flower Garden, Cape Wijk, I found many perfect skeletons of Little Auks.

—28. *FRATERCULA GLACIALIS* (Leach). Northern Puffin.

The Northern Puffin has been recorded from as far north as Walden Island (Eaton, Zool. 1874, p. 3819). I did not actually see it there, though I saw several on the sea between Verlegen Point and Walden Island. It is generally but

sparingly distributed round West Spitsbergen. I have presented some examples to the National Collection, and no one who compares these with *F. fratercula* can, I think, hesitate to accept the correctness of the separation of these two species.

29. COLYMBUS SEPTENTRIONALIS, Linn. Red - throated Diver.

This, the only Diver observed in Spitsbergen, has, so far as is known, a fairly wide distribution there; for Mr. Eaton records it from Wijde Bay and Neurenberg Bay, and Prof. Newton says it breeds as far north as the Seven Islands. There were three pairs on the lakes by the Flower Garden, Cape Wijk, last year. Two had made nests, but had no eggs, on July 17th*.

XLIV.—*Additional Observations on the Birds of the Province of Fohkien.*† By C. B. RICKETT and J. D. DE LA TOUCHE. *With Notes by W. R. OGILVIE GRANT.*

MR. F. W. STYAN and the writers made an excursion to Ching Feng Ling in December last, leaving Foochow on the 5th and returning on the 20th instant.

Ching Feng Ling is a hamlet situated among the hills about 100 miles north-west of Foochow and some 1500 feet above the sea. The mountains in the vicinity range from about 2000 to 2500 feet in height. They are mostly covered with thick brushwood, bamboos, and "sword-grass," with here and there small pine-woods. There are three patches of high forest in the neighbourhood, from two of which we obtained most of our specimens. The third (which was more distant) was visited once by our native collectors.

We subjoin (p. 602) a list of birds obtained, with notes on a few of the more interesting species. We also give below

* [There is some evidence that either a Great Northern Diver or, more probably, the Yellow-billed Northern Diver, was seen off Spitsbergen in the autumn of 1882. Cf. A. H. COCKS, Zool. 1883, pp. 399-400.—EDD.]

† Cf. IBIS, 1892, pp. 400-430, 477-503; 1894, pp. 215-226; 1896, pp. 489-495; 1897, pp. 169-176, pl. iv.

a list of birds obtained by our collectors at Kuatun from June to November last year.

THIRD LIST.

List of Birds collected at Kuatun, Fohkien Province,
South China.

Date.	Species.
Sept. & Oct.	<i>Geocichla sibirica</i> . †
Oct.	<i>Erithacus sibilans</i> . †
"	<i>Monticola erythrogaster</i> . -
"	<i>Brachypteryx sinensis</i> . †
Sept. & Oct.	<i>Garrulax picticollis</i> . †
"	<i>Ianthocincla berthemyi</i> . †
"	<i>Trochalopteron cinereiceps</i> . †
Oct.	<i>Pomatorhinus swinhoii</i> . -
Sept. & Oct.	<i>Alcippe brunnea</i> . -
"	— <i>hueti</i> . †
Oct.	<i>Proparus guttaticollis</i> . †
"	<i>Phylloscopus affinis</i> . -
"	<i>Cettia</i> sp.
"	<i>Suya crinigera</i> .
Sept. & Oct.	<i>Suthora davidiana</i> .
Sept.	<i>Paradoxornis gularis</i> .
Sept. & Oct.	<i>Henicurus guttatus</i> . †
"	<i>Machlolophus rex</i> .
"	<i>Parus venustulus</i> . †
"	— <i>pekinensis</i> . †
"	<i>Pteruthius aeralatus</i> .
Oct.	<i>Allotrius pallidus</i> .
Sept. & Oct.	<i>Liothrix luteus</i> . †
Oct.	<i>Sylviparus modestus</i> . †
Sept.	<i>Staphidia torqueola</i> . -
Sept. & Oct.	<i>Yuhina pallida</i> . †
"	<i>Sitta sinensis</i> . †
Sept.	<i>Oreocorys sylvanus</i> . †
"	<i>Iole holti</i> .
Sept. & Oct.	<i>Hemixus canipennis</i> . —
Sept.	<i>Hypsipetes leucocephalus</i> .
Oct.	<i>Spizixus semitorques</i> . -
"	<i>Pnoepyga pusilla</i> .
Sept. & Oct.	<i>Pericrocotus griseigularis</i> . †
Oct.	<i>Terpsiphone princeps</i> .
Sept.	<i>Cryptolopha castaneiceps</i> . †
Sept. & Oct.	— <i>ricketti</i> . †
"	— <i>tephrocephala</i> . †

Date.	Species.
Oct. & Nov.	<i>Cryptolopha fulvifacies</i> .
Oct.	<i>Poliomyias luteola</i> . †
Sept. & Oct.	<i>Pyrrhula nipalensis</i> . †
Oct.	<i>Chrysomitris spinus</i> . †
„	<i>Emberiza rutila</i> . †
„	<i>Lepocestes chinensis</i> .
„	<i>Dendrocopus subcirris</i> .
„	<i>Gecinulus viridanus</i> . †
„	<i>Picumnus sinensis</i> .
Sept.	<i>Cuculus intermedius</i> . †
Oct.	<i>Hierococcyx hyperythrus</i> . †
June to Oct.	<i>Scops stictonotus</i> .
Sept.	<i>Gemmæus nycthemerus</i> .

The above merely gives the more interesting species obtained.

List of Birds collected at Ching Feng Ling, about 100 miles N.W. of Foochow (1500 feet), 9th to 18th Dec., 1896.

<i>Merula pallida</i> .	<i>Æthopyga latouchii</i> .
<i>Geocichla varia</i> .	<i>Herpornis tyrannulus</i> .
<i>Myiophoneus cæruleus</i> .	<i>Acredula concinna</i> .
<i>Garrulax picticollis</i> .	<i>Parus minor</i> .
<i>Dryonastes sannio</i> .	<i>Liothrix luteus</i> .
— <i>perspicillatus</i> . †	<i>Staphidia torqueola</i> .
<i>Trochalopteron cinereiceps</i> .	<i>Zosterops simplex</i> .
— <i>canorum</i> .	<i>Anthus maculatus</i> .
<i>Pomatorhinus swinhoii</i> .	<i>Spizixus semitorques</i> .
— <i>stridulus</i> .	<i>Hemixus canipennis</i> .
<i>Alcippe hueti</i> .	<i>Iole holti</i> .
— <i>brunnea</i> .	<i>Emberiza tristrami</i> .
<i>Stachyris ruficeps</i> .	— <i>spodocephala</i> .
<i>Prinia sonitans</i> .	<i>Dendrocitta sinensis</i> .
<i>Paradoxornis guttaticollis</i> .	<i>Garrulus sinensis</i> .
— <i>gularis</i> .	<i>Lepocestes sinensis</i> . †
<i>Henicurus sinensis</i> .	<i>Iyngipicus scintilliceps</i> .
— <i>schistaceus</i> . †	<i>Picus cabanisi</i> . †
<i>Pratincola maura</i> .	<i>Micropternis fokiensis</i> . †
<i>Tarsiger cyanura</i> .	<i>Microhierax melanoleucus</i> . †
<i>Phylloscopus proregulus</i> .	<i>Circus cyaneus</i> . †
— <i>reguloides</i> .	<i>Rallus indicus</i> .
<i>Cettia fortipes</i> .	<i>Tringoides hypoleucus</i> .
<i>Cryptolopha fulvifacies</i> .	<i>Ægialitis placidus</i> .
<i>Dicaeum ignipectus</i> .	

† *LEPOCESTES SINENSIS*.

Lepocestes sinensis, Rickett, Bull. B. O. C. vi. p. 1 (May 1897).

Male viz adult. Easily distinguished from the male of *L. pyrrhotis* (Hodgs.) by having the top of the head striped with pale brownish buff instead of chestnut; mantle and interscapular region *black*, with rather narrow pale rufous-buff bars; the wings and tail paler rufous chestnut, the latter as well as the former with wide, regular, black cross-bars, nearly as wide as the interspaces. Total length 11·2 inches, culmen 1·7, wing 5·7, tail (imperfect) 3·3, tarsus 1·1.

Female. Similar to the male, but without any trace of the scarlet nuchal collar. Total length 11·2 inches, culmen 1·6, wing 5·9, tail (imperfect) 3·4, tarsus 1·1.

A second female, one of a pair, was also obtained and measured in the flesh:—Total length 11·2 inches, culmen 1·6, wing 5·8, tail 4·1, tarsus 1·1.

The types were obtained in Kuatun in October 1896.

ÆTHOPYGA LATOUCHII, Slater.

We were much pleased at obtaining near Ching Feng Ling a specimen of this Sunbird, which was first discovered by our collector, T'ang Wang-wang, in N.E. Kwangtung (see *Ibis*, 1891, p. 43). The present example, a female, was shot in jungle on the borders of a wood by another native sportsman, T'ang Chim-kai, to whom we are indebted for many other interesting captures. Although we kept up a careful daily search for this bird we did not find any more.

† *YUHINA PALLIDA*.

Yuhina pallida, de La Touche, Bull. B. O. C. vi. p. 1 (May 1897).

Yuhina nigrimentum, Swinhoe (nec Hodgs.), P. Z. S. 1871, p. 373; David & Oustalet, Ois. Chine, p. 139, pl. 70 (1877); Slater, *Ibis*, 1897, p. 173.

Adult male and female. Differ constantly from *Y. nigrimentum* in having the upper parts ashy olive instead of olive, while the breast and rest of underparts are white with only the faintest tinge of fulvous. They are also somewhat larger birds. Wing 2·3 inches.

[I have examined several specimens of this bird, which appears to be quite distinct from the Himalayan *Y. nigritum*.—W. R. O. G.]

HEMIXUS CANIPENNIS, Seeböhm.

These Bulbuls seem to be common on the hills near Ching Feng Ling. We found them in flocks in the woods, where they kept up a concert of loud and varied musical calls, one of which rose to a beautiful clear high note.

IOLE HOLTI (Swinhoe).

Not uncommon in noisy flocks among trees. Two or three of those obtained were in moult. Their notes are not at all those of a Bulbul, one being very similar to a note of *Copsychus saularis*.

POMATORHINUS SWINHOU, David. [277.]

Also common. Their loud clear call-notes were heard on all sides, especially in the mornings and evenings. They are, however, difficult to obtain, as they keep well concealed in dense patches of "sword-grass" and thickets of young bamboo, feeding chiefly on the ground. As a rule they appear to be in pairs, each pair apparently having a district of its own.

GARRULAX PICTICOLLIS, Swinhoe. [291.]

We found this species common at Ching Feng Ling. The birds were always in parties, frequenting underwood in forests or detached clumps of trees.

They appear to feed chiefly on the ground, and one of us obtained a good view of some when thus engaged. They were scattering the dead leaves about and pecking vigorously at the earth. The blows dealt at the ground were extraordinarily powerful, the bird raising itself to the full stretch of its legs and bringing its beak down like a pickaxe, at the same time dropping its wings down by its sides.

When disturbed they invariably took to the trees, calling with clear and very melodious notes and rapidly disappeared from sight. Wounded birds uttered loud harsh cries, and ran through the cover with great speed.

We obtained 25 specimens, and note a good deal of variety in the colour of the "necklace," which varies from pale ash to dark iron-grey and black, these colours being often mixed and shading into one another.

Young birds are much smaller than the old ones. They want the white streaks on the ear-coverts, and the "necklace," where it crosses the chest, is narrow, blackish, and unbroken. Their irides are pale straw-colour, while in the old birds it is usually crimson.

The average length of wing in 21 adult skins (from Kuatun and Ching Feng Ling) is 5.4. In five young birds it is 4.75.

† TROCHALOPTERON CINEREICEPS, Styan.

This bird is common in the Ching Feng Ling country. We found it in jungle on the outskirts of woods, into which, however, it did not penetrate far, unless the cover happened to be very thick. It was generally seen in small flocks feeding in the company of the common "Hwamei" (*T. canorum*). Like all its relations, *T. cinereiceps* is cunning and is very careful to keep well hidden if at all suspicious of danger. We often heard parties noisily pecking among dead leaves, &c., in the cover quite close to us; but they would seldom show themselves, and even then only for a second or two, just flitting across the path to dive quickly into the shelter of the neighbouring brushwood. On the first day that we came across them, however, we found these grey-capped "Hwamei" to be very tame, and one of us had a good view of several parties.

One of the specimens procured on this trip has an almost pure black cap, a very few of the feathers showing traces of the grey edging; a few specimens have dark-grey caps, with blackish centres to the feathers, but many of the other examples have this part of a greyish brown, not much darker than the back. Our Kuatun skins have mostly dark-grey caps, mixed in some specimens with black.

PARADOXORNIS GUTTATICOLLIS, David. [301.]

Numerous, but not often seen, as the flocks keep closely hidden among the rank "sword-grass." Now and then one

might be seen sidling up a stem, twisting its body about and jerking its tail from side to side in a very Tit-like manner.

They keep up a constant chatter, which becomes loud and angry in tone if they are startled or disturbed in any way.

PARADOXORNIS GULARIS, Gray.

Styan came across a flock of this species in a dense tangle of "sword-grass" and young bamboos, but only succeeded in shooting one specimen, although the birds were all round him.

LIOTHRIX LUTEUS (Scop.). [316.]

While beating a thin strip of jungle bordering one of the large woods in the neighbourhood of Ching Feng Ling, an example of *L. luteus* was secured, together with some specimens of *Stachyridopsis ruficeps*, *Alcippe brunnea*, and *Trochalopteron cinereiceps*. There was a large gathering of these birds in the cover, while just inside the wood a noisy flock of *Garrulax picticollis* and *Dendrocitta sinensis* were busy feeding under the big trees.

ALLOTRIUS PALLIDUS, David & Oustal. [317.]

[Messrs. Rickett and de La Touche forward a bird from Kuatun which is correctly identified under the above name. Although this species has been doubtfully referred to the synonymy of *A. xanthochloris*, Hodgs., it is undoubtedly perfectly distinct from that species. The grey of the head continued on to the interscapular region and the white ring surrounding the eye render it easily recognizable from the Himalayan bird.—W. R. O. G.]

HERPORNIS TYRANNULUS, Swinhoe. [318.]

Two specimens identical with the one from Kuatun, recorded in 'The Ibis,' 1896, p. 490, were shot in a wood. They were travelling with a small party consisting of *Cryptolopha fulvifacies* and *Phylloscopus proregulus*, and were brought down from the top branches of a tree which they were diligently exploring with their companions.

ALCIPPE HUETI, David.

This interesting little bird occurs in more or less large

flocks on the hills. Though generally keeping to the under-wood, it will sometimes venture to explore trees of medium size in search of food. It is of a very sociable disposition, and is usually accompanied by other small birds, such as *Stachyridopsis ruficeps* and *Pomatorhinus stridulus*. It always betrays its presence by scolding and chattering vigorously.

+ *ALCIPPE BRUNNEA*, Gould. [319.]

Another common species. The birds were always in small parties, hopping quietly among the bushes, often in company with *A. hueti* or others. They are very tame and confiding, sometimes coming to the edge of a thicket, and then, after almost peeping into one's face, disappearing into the cover again with a quiet chatter.

+ *STAPHIDIA TORQUEOLA*, Swinhoe. [326.]

Four specimens obtained. The first was shot by one of us from a mixed flock of small birds amongst some bushes and small trees. The other three were shot by our natives.

+ *BRACHYPTERYX SINENSIS*.

Brachypteryx sinensis, Rickett, Bull. B. O. C. vi. p. 1 (May 1897).

Adult male. Differs from the male of *B. cruralis*, in its much paler colouring; the white superciliary stripe is well developed, but the lores and the wide black band in front of the eye, characteristic of the latter species, are grey instead of black; chin, throat, and underparts grey, palest on the throat and middle of the belly, and the edge of the shoulder white. Total length 5.5 inches, culmen 0.6, wing 2.6, tail 1.9, tarsus 1.15.

The Chinese species is really most nearly allied to *B. montana* from Java, but the latter differs in the darker colour of the upper parts, longer bill, and the absence of white at the bend of the wing.

Adult female. Easily distinguished from the female of *B. cruralis*: the rust-colour on the forehead, fore part of crown, and sides of face, as well as the white superciliary stripes, are replaced by nearly uniform olive-brown; the tail-feathers are washed with olive instead of rufous, and the

underparts, especially the chin, throat, and middle of the breast, very much paler, the latter, in fact, being mostly pure white; the feathers round the bend of the wing and the under wing- and tail-coverts pale buff. Total length 5·4 inches, culmen 0·58, wing 2·6, tail 1·9, tarsus 1·15.

Specimens were obtained at Kuatun, N.W. Fohkien.

ERITHACUS AKAHIGE (Temm.). [334.]

Styan had a close view of one in thick jungle, but he was unable to secure it, as the bird was too near to be shot without being blown into atoms.

So far as we know, this is only the third time that this Robin has been noted in China; Père David mentions one shot at Peking, and one at Kuatun in N.W. Fohkien.

CRYPTOLOPHA FULVIFACIES, Swinhoe. [394.]

We often met flocks of these pretty birds. They frequent woods and jungle indifferently, and, like many other small gregarious birds during the cold season, they seem to be in a perpetual hurry, passing rapidly along the tree-tops in the woods or slipping quickly through jungle, keeping up a constant murmur of anxious calls. Large flocks of *Acredula concinna* and small parties of *Phylloscopus proregulus* were on several occasions seen in their company.

PHYLLOSCOPUS REGULOIDES (Blyth).

Acanthopneuste trochiloides, Oates, Fauna Brit. India, Birds, i. p. 419 (1889).

One shot at Ching Feng Ling. ♀. Wing 2·3 inches.

Three specimens from Kuatun in October. Wing 2·3, 2·3, 2·2.

[The second primary varies somewhat in length, but is always shorter than the seventh. Two examples obtained by Mr. Pratt at Ichang, May 1888, are referable to the present species.—W. R. O. G.]

CETTIA, sp.

[Messrs. Rickett and de La Touche forward a small Warbler obtained in Kuatun in October. This specimen is closely allied to *C. brunnescens*, but will probably prove distinct.

Further specimens are required to settle this point.—
W. R. O. G.]

† *PROPARUS GUTTATICOLLIS*.

Proparus guttaticollis, de La Touche, Bull. B. O. C. vi.
p. 1 (May 1897).

Adult. Nearly allied to *P. striaticollis* (Verr.), but the top of the head and nape are uniform snuff-brown, without a trace of black markings, and indistinctly bordered all round with a band of dark smoky brown; the lores are *white*, not black. Total length 4.6 inches, culmen 0.5, wing 2.05, tail 2.1, tarsus 0.95.

Hab. Kuatun, Fohkien.

[There can be no doubt that Mr. Oates is right, and that the genus *Fulvetta* [David & Oustalet, Ois. Chine, p. 220 (1877)], proposed for the three species *F. cinereiceps*, *F. ruficapilla*, and *F. striaticollis*, is merely a synonym of *Proparus*, Hodgson, J. A. S. B. x. pt. 1, p. 29 (1841).—W. R. O. G.]

† *OREOCORYS SYLVANUS* (Hodgs.).

One was seen by de La Touche on the way to Ching Feng Ling. This bird behaved exactly as one shot on a barren hillside near Foochow in January 1896. It was skulking under the thin scrub close to the road, and when disturbed ran a little way and flew up, to alight a few paces off among the low bushes that covered the hillside below the road.

This species is probably a not uncommon resident on the Fohkien hills.

† *EMBERIZA TRISTRAMI*, Swinhoe. [471.]

A party of these Buntings frequented a patch of dead vegetation (*Artemisia*?) just outside the village. They seem to be ground-feeders, and the call (*tzit-tzit*) and their ways are very like those of *E. spodocephala*. Another flock was met with in a plantation of tea-oil trees.

This species would thus appear to winter *among the hills*, which explains our not having met with it near Foochow, except on one occasion (Jan. 1896), when a single female example was shot on a wooded hillock close to Foochow.

The unusually severe weather that prevailed at the time was probably the cause of its occurrence in the valley.

DENDROCITTA SINENSIS (Latham). [541.]

Very common, often in large flocks among the trees or feeding on the ground. They have a variety of notes, all more or less musical.

The noise made by their wings in flight is very loud and peculiar, sounding like *wuff, wuff, wuff*.

XLV.—*Bulletin of the British Ornithologists' Club.*

No. XLVI. (June 30th, 1897.)

THE forty-fifth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 16th of June, 1897.

Chairman: DR. F. PENROSE.

Members present:—E. BIDWELL, W. F. BROCKHOLES, Dr. F. D. DREWITT, Dr. H. O. FORBES, W. R. OGILVIE GRANT, E. HARTERT, Col. P. W. L'ESTRANGE, G. E. LODGE, A. H. MACPHERSON, E. NEALE, R. NESHAM, H. NOBLE, C. E. PEARSON, Hon. L. W. ROTHSCHILD, Hon. N. C. ROTHSCHILD, H. F. WITHERBY, J. YOUNG.

Visitors: Captain BACON, W. W. FOWLER, Dr. E. GWYNN, Prof. F. WERNER, C. A. WITCHELL.

THE Hon. WALTER ROTHSCHILD exhibited a specimen of Cory's Bittern (*Ardetta neoxena*, Cory), from Canada. It was believed to be the only specimen in any museum in England. Some ornithologists had regarded this bird as a melanism of *Ardetta exilis*, but it was now generally admitted to be a distinct species. (See A. O. U. Check-List, 1895, p. 70.)

MR. ROTHSCHILD exhibited a pair of *Eclectus cornelia*, Bonap. This fine Parrot had hitherto been known only from females which had died in captivity; but recently

Mr. W. Doherty and Mr. A. H. Everett had collected a series, including examples of both sexes, in the interior of the island of Sumba.

Mr. ROTHSCHILD also showed skins of *Psittuteles weberi*, Büttik., and *P. euteles*. Numbers of the latter species had been collected by Dr. A. R. Wallace both in Timor and Flores, while the former had been first obtained in Flores by Prof. Weber, and more recently by Mr. Everett. Prof. Mivart, in his 'Monograph of the Loriidæ,' had united the two species, because both occurred in Flores. It seemed remarkable that both species should inhabit the same island, and it was suggested that possibly Dr. Wallace's specimens of *P. euteles* bore an erroneous locality; but, in either case, the two species were perfectly distinct, differing much in colour and size.

Mr. ROTHSCHILD made further remarks on Prof. Steere's type of *Paradisea minor*, var. *albescens*, Muschenbr. It was shown to be a "made up" specimen; part being a male of the typical *P. minor*, showing the white abdomen characteristic of the immature bird, to which had been added the long side plumes of a male of *P. minor jobiensis*, Rothschild.

Mr. ROTHSCHILD likewise informed the Meeting that he had purchased the collection of the late Christian Ludwig Brehm. This once-celebrated collection of one of the fathers of German ornithology had unfortunately suffered from neglect, being kept in a small country house, but it still contained nearly all the types of the many "species" and "subspecies" made by C. L. Brehm. It had been customary among British and Continental authors to place Brehm's numerous names as synonyms of our well-known European species; but, although this might be right in the majority of cases, recent investigations had shown that some of Brehm's forms, such as *Nucifraga*, *Parus*, *Certhia*, *Galerida*, and others, deserved subspecific and even specific rank.

XLVI.—*Notices of recent Ornithological Publications.*

[Continued from p. 474.]

91. *Australian Museum Report.*

[Report of the Trustees of the Australian Museum, New South Wales, for the year 1895.]

By the forty-second Annual Report of the Trustees of the Australian Museum, Sydney, of which Mr. R. Etheridge, jun., is now Curator, we learn that the progress of this great institution has been satisfactory, though somewhat hampered by want of funds. Mr. North's account of his year's work in the Class of Birds will be read with interest by ornithologists. The "group-collection," which is intended to illustrate the life-histories of Australian birds, has been augmented by 16 cases, and now represents 61 species.

92. *Chapman (Abel) on Northern Birds.*

[Wild Norway: with Chapters on Spitsbergen, Denmark, etc. By Abel Chapman. Illustrated by the Author, assisted by Chas. Whympere and P. Ch. French. London: Edward Arnold, 1897.]

In this inspiring book the author gives the results of his experiences in Northern Europe during sixteen years. Even if we put aside, from our point of view, the accounts of sport with elk and reindeer, grouse and ptarmigan, salmon and trout, there remains plenty to interest the reader of exclusively ornithological tastes, while a general idea of Scandinavia and the distribution of its fauna is conveyed with remarkable vividness. The sub-chapters on 'The Avifauna of Norway,' Bird-life in the Sörendal, Bird-notes in the Förde Valley, as well as Specific Notes on Grouse and Ptarmigan, may be specially indicated; while Chapter xviii. contains a very complete summary of Scandinavian birds, their distribution, &c. Two chapters are devoted to Denmark, on which an excellent paper was contributed to our pages (*Ibis*, 1894, pp. 339-351) by the author's much-regretted brother, the late Alfred C. Chapman; there are notes on Bird- and Insect-migration observed on twenty-

four crossings of the North Sea; and numbers of spirited vignettes of birds, from the author's pencil, are scattered through the book. Lastly, we owe to Mr. Chapman the extracts from the Journal of Mr. Arnold Pike, who remained in Spitsbergen from August 21st, 1888, to June 8th, 1889. Snowy Owls were seen there on October 5th and 14th, and for the last time on November 2nd, until spring. Mandt's Guillemots were seen, and Eiders and Brünnich's Guillemots were heard, as early as January 11th; Fulmars made their appearance by February 20th; the first Ivory Gull on March 15th; on March 23rd the Snowy Owl had begun to prey on "ryper" (*Lagopus hemileucurus*); while Glaucous Gulls came on the 26th, and Little Auks on the 28th of March. A Sanderling (*Calidris arenaria*) was shot on Amsterdam Island on August 21st, 1888, and Mr. Chapman has the skin [*suprà* p. 591].

93. *Finn on the Cotton-Teal (Nettapus).*

[Note on the Gait of the Cotton-Teal, with exhibition of living specimens. By F. Finn, B.A., F.Z.S. Proc. A. S. Beng., April 1897.]

The writer undoubtedly shows that, contrary to what prior authorities have stated, Cotton-Teal can walk, but it cannot be said that they walk so freely as many other of the Anatidæ. Mr. Finn has kindly sent some living specimens of *Nettapus coromandelianus* to the Zoological Society's Gardens, so those who are interested in the question can judge for themselves.

94. *Flower on Natural History as a Vocation.*

[Natural History as a Vocation. By Sir William H. Flower, K.C.B., F.R.S. Chambers's Journ. xiv. p. 225, 1897.]

Sir William Flower's short article on the question of taking up Natural History as a "vocation" will, we are sure, be read with profit by everyone who has to consider this important subject. As the "regular occupation of one who has no other means of living," Natural History is, as Sir William puts it, about the worst paid profession in the world. Nevertheless, there can be no doubt that matters

are steadily improving, and that the "collecting-instinct" which is so largely developed in some boys should on no account be suppressed. More excellent advice on the subject than that contained in the present address could not possibly be put together in a few words.

95. *Fulcher on British Birds.*

[Birds of Our Islands. By F. A. Fulcher. London: Andrew Melrose. 8vo.]

As this book has been sent to us, we notice it, but we do so with regret, for it contains more errors than are usual even in "popular" works. Some of the illustrations by Nops are good, but they are wrongly named: the bird called "White-tailed Eagle" (p. 236) is a Golden Eagle, and the "Merlin and its Prey" (p. 240) represents a Peregrine on a Mallard. The Merlin has been credited with many wonderful feats, but this excels them all. So far as the author's experience goes, the letterpress is tolerable, but there is much compilation and not good of its kind.

96-99. *Hartert's recent Contributions to Ornithology.*

[96. On some Necessary and some Desirable Changes of Names lately used in connection with Philippine Birds. *Novitates Zoologicae*, iv. p. 11, 1897.

97. Notes on Palæarctic Birds and Allied Forms. *Op. cit.* p. 131.

98. Mr. William Doherty's Bird-collections from Celebes. *Op. cit.* p. 153.

99. Descriptions of seven new Species of Birds and one new Subspecies from Flores, and of one new Subspecies from Djampea, all collected by Mr. William Everett. *Op. cit.* p. 170.]

In No. 96 Mr. Hartert points out that *Cinnyris excellens*, Grant = *Æthopyga flagrans*, Oust.; that *Artamides mindanensis*, Steere = *Graucalus kochi*, Kutter; and makes further remarks on the synonymy and status of five species of Philippine birds.

In No. 97 Mr. Hartert treats of the birds of the genera *Nucifraga*, *Certhia*, *Ammodramus*, and *Galerida*. In *Nucifraga* he now recognizes 4 subspecies of *N. caryocatactes*—

namely, *N. c. caryocatactes*, *N. c. relictæ*, *N. c. macro-rhynchos*, and *N. c. japonicus*, the last being a new subspecies from N. Japan and the Kuriles. The genus *Certhia* is, as Mr. Hartert truly says, a "much-hunted ground." Here, however, our friend again adds a new subspecies—*C. familiaris japonica*, and recognizes 7 species; one of these divided into 10 and another into 2 subspecies! Our familiar British species is to be *C. f. brittannica* [sic], but we cannot bring ourselves to spell Britain with two t's, because the original author of the name did not spell it correctly. As regards the two genera of Larks (more hunted than even *Certhia*) we will ask those interested in these difficult birds to read our author's notes and consult his tables—observing merely that in the latter genus he makes three new names: *Galerida cristata deltae* (from Lower Egypt); *G. cristata superflua* (from Tunis)=*G. pallida*, Whitaker; and *G. ellioti* (from Somaliland)=*G. pallida*, Elliot.

No. 98. After visiting Java, Bali, Lombok, Sambawa, and Sumba, Mr. Doherty proceeded to Celebes, and made a short expedition up Bonthain Peak, where about half his collection was made at a height of 5000 feet. He then collected in the low country north of Macassar in July 1896, and passed the two following months near Palvo Bay, in West Celebes. Mr. Hartert gives us separate lists of the birds obtained in these three localities. On Bonthain Peak examples of 46 species were procured, and in commenting on these Mr. Hartert introduces two new subspecies: *Cinnyris frenata meyeri* (from North Celebes), and *C. f. salayerensis* from the Salayer Islands.

The 50 skins collected in the low country north of Macassar are mostly referable to well-known species, but Mr. Hartert mentions 12 as of interest, among which are specimens of *Siphia rufigula*, *Monachalcyon capucinus*, and *Phlogœnas bimaculata*. The birds collected near Palos Bay are referred to 65 species, amongst which *Munia subcastanea*, *Monachalcyon monachus intermedius*, and *Cacutua sulphurea djampeana* are described as new.

In No. 99 Mr. Hartert describes the following 7 new

species from specimens obtained by Mr. A. Everett in Southern Flores: *Brachypteryx floris*, *Orthonocichla everetti*, *Micræca oscillans*, *Pachycephala nudigula*, *Lophozosterops subcristatus*, *Zosterops crassirostris*, and *Z. superciliaris*; also a new subspecies—*Cryptolopha montis floris*. A new subspecies of *Trochoglossus forsteni* from Djampea is named *T. f. djampeanus*.

100. Helms on Birds met with in the North Atlantic.

[Ornithologiske Jagttagelser fra det nordlige Atlanterhav. Af O. Helms. Vidensk. Meddel. fra d. naturh. Foren. i Kbhvn. 1897, p. 216.]

Having made several voyages between Denmark and Greenland, and thus naturally become interested in the birds observed and obtained during his passages across the North Atlantic, Mr. Helms has prepared the present memoir on the subject. The birds met with on the ocean fall naturally into two divisions:—Land-birds that are stragglers or migrants, and pelagic birds. After some preliminary remarks, Mr. Helms treats of both of these classes in systematic order. The Passeres of his list are 8 in number, 6 of which are European and 2 American. Altogether he enumerates about 30 species as having been noted or met with by different observers.

101. Johnston on the Birds of British Central Africa.

[British Central Africa: an attempt to give some Account of a Portion of the Territories under British influence north of the Zambesi. By Sir Harry H. Johnston, K.C.B. &c. 1 vol. 544 pp. London: Methuen, 1897.]

Sir Harry Johnston's well-written and beautifully-illustrated volume on the new British Territory, of which he has been the first and very successful Governor, should be studied by all those who are interested in the modern development of Africa. Here, at least, there can be no question that a few short years of good administration have enabled an energetic ruler to bring order out of chaos. But what we are specially interested in is his chapter on the birds of British Central Africa.

As is well known to readers of 'The Ibis,' Sir Harry Johnston, when selecting officers for his new government, considered that his staff would not be complete without a representative of science, and took out with him for this post Mr. Alexander Whyte, F.Z.S. Under Sir Harry's directions Mr. Whyte made large collections in every branch of Natural History, and in particular sent home numerous series of birds, which have been described by Capt. Shelley in this Journal. Sir Harry Johnston now gives a complete list of these birds, nearly according to Capt. Shelley's arrangement, and prefaces it with a valuable article, based chiefly on his own observations, on the most noticeable features of the Central-African Ornithology. We subjoin Sir Harry's notes on a Bee-eater, which he rightly characterizes as "almost the most gorgeously coloured of living birds":—

"Notable amongst the Bee-eaters is the lovely *Merops natalensis*, which is abundant on the river Shiré and probably in other low-lying parts of British Central Africa. At Chiromo this bird is present in large numbers, as it nests in holes in the high clay-bank on the spot which divides the river Ruvo from the Shiré. When I arrived at Chiromo in 1891 to commence the administration of this country I found that these beautiful birds were being shot down in numbers to be skinned and sent home for the decoration of hats. I consequently took them under Government protection; since that time their numbers have greatly increased, and they have become wonderfully tame. It is objected, however, to this favour shown to them that, burrowing into the bank to make holes for the reception of their eggs, they assist the water in flood-time to eat away the clay and so gradually diminish the site of Chiromo. I do not think there is any fear that the Bee-eaters may cause more than the loss of a few feet of clay-cliffs, and the ground they are thus destroying is a piece of Government land which is retained as a kind of a park. When these Bee-eaters settle on the branches of a bare leafless bush, which they are very fond of doing, the first impression on the passing traveller is that this shrub is covered with gorgeous blue and crimson flowers, till, when

he is advancing to gather them, the flowers change into birds which fly away and leave the bareness of the bush singularly apparent."

102. *Kuschel on the Parasitic Habits of Cassidix.*

[Ueber die Fortpflanzung von *Cassidix oryzivora*, Sch. Von M. Kuschel. J. f. O. 1897, p. 168.]

This is an interesting paper, confirming what we have already published in this Journal (see *Ibis*, 1896, p. 585, and *suprà*, p. 143) as to the parasitic habits of *Cassidix oryzivora*. But we believe that Dr. Goeldi was the original discoverer of the curious fact now confirmed by Herr Schulz's observations.

103. *Lee's Photographs of British Birds.*

[Among British Birds in their Nesting-Haunts, illustrated by the Camera. By Oswin A. J. Lee. Pts. III.-V. 4to. Edinburgh: Douglas. 1897.]

In these further instalments of this admirable work (*cf.* *Ibis*, *suprà*, p. 276) the nests represented are those of the following species:—Part III. *Acredula caudata* (2), *Larus ridibundus*, *Podiceps fluvialis* (2), *Charadrius pluvialis*, *Vanellus vulgaris* (2), *Larus argentatus*, *Totanus canescens*. Part IV. *Scolopax rusticula*, *Hæmatopus ostralegus* (2), *Anthus trivialis*, *Emberiza schæniclus*, *Ægialitis hiaticula*, *Sterna minuta* (2), *Corvus monedula*. Part V. *Crex pratensis*, *Fringilla cælebs*, *Tetrao urogallus* (2), *Gallinago cælestis*, *Cygnus olor* (2), *Regulus cristatus*, *Totanus hypoleucus* (2). While the standard of excellence is fully maintained in the photographs and the letterpress, there are also some very characteristic vignettes from pen-and-ink sketches. By the way, we should like to know Mr. Lee's authority for his statement respecting the Tree-Pipit in Ireland.

104. *Le Souëf's Expedition to Mount Peter Botte.*

[Ascent of Mt. Peter Botte, North Queensland. By D. Le Souëf. Victorian Naturalist, March-April, 1897.]

Like others of Mr. Le Souëf's interesting narratives, the

journal of his expedition to Mount "Peter Botte" (which lies about fifty miles south of the port of Cooktown in Northern Queensland) will be found full of allusions to birds and their habits. Mr. Le Souëf went by steamer from Melbourne to Cooktown, and thence by road to Wyalla, a station on the Bloomfield river. Hence the start was made for "Peter Botte" with a party of natives to carry the baggage over a very rough route. A view is given, taken from a photograph, of the summit of this very singularly-shaped mountain, so named from its supposed resemblance to its prototype in Mauritius. The party mounted the ridge to the height of 2400 feet and met with many rare birds—*Ælurædus maculosus*, *Cracticus quoyi*, *Prionodura newtoniana*, &c.,—in the vicinity, and managed to get to the top of the smaller mountain, whence a splendid view was obtained of the "large solid bell-shaped mass of grey granite" that constituted the larger and inaccessible summit of Mount "Peter Botte."

On their return they saw and heard an example of the rare Tooth-billed Bower-bird (*Scenopæus dentirostris*), and shortly afterwards came on its playground. "It cannot be called a bower, as the bird merely scratches the dead leaves and rubbish off a piece of ground measuring about 3 feet by 2, and places on it a few green leaves, with their upper surfaces on the ground and their backs exposed to view, which, of course, made them more conspicuous, being of a lighter colour. They were not placed in any regular order, any more than being the same distance apart, namely, about 4 inches, and the number of leaves varied in the different playgrounds from eight and upwards." Mr. Le Souëf examined over a dozen different grounds, and did not find any trace of berries, shells, or other objects, but simply the green leaves, which were always fresh, and seemed as if they were picked daily.

105. *Masefield on Wild-Bird Protection and Nesting-Boxes.*

[Wild Bird Protection and Nesting-Boxes. By John R. B. Masefield, M.A. Leeds, 1897. 1 vol. 12mo. 130 pp.]

In putting together in this little volume an intelligible

account of the various Wild Birds' Protection Acts that have been passed by our Legislature, and in collecting the Orders made by authority in the different Counties of England, Mr. Masfield has done a good work for his feathered favourites and for persons who sympathize with his views. The portion of Mr. Masfield's volume devoted to the description and illustration of nesting-boxes is likewise of great value. Nesting-boxes are an easy and delightful method of attracting a number of familiar and interesting species to breed in our gardens and even upon our houses. Mr. Masfield gives us a list of between 30 and 40 species that he has thus induced to breed within the precincts of his gardens, shrubberies, and buildings, and we believe that the list might be easily extended. We heartily commend this useful manual to all who are desirous of encouraging and observing birds.

106. *Merriam on Species and Subspecies.*

[Suggestions for a new Method of Discriminating between Species and Subspecies. By C. Hart Merriam. 'Science,' n. s. v. p. 753, 1897.]

The ordinary rule among the American naturalists has been to treat "forms that intergrade, no matter how different, as subspecies," and "forms that do not intergrade, no matter how closely related, as species." It must, however, be confessed that this rule has not been closely adhered to in practice. Dr. Merriam, discussing the question in 'Science,' has now come to a different conclusion, and states that in his judgment "forms which differ only slightly should rank as subspecies, even if not known to intergrade, while forms which differ in definite, constant, and easily recognized characters should rank as species even if known to intergrade." This, we think, is a common-sense view of the question.

107. *Meyer and Wieglesworth on Birds from Celebes.*

[Bericht über die 5-7 Vogelsammlung der Herren Dr. P. und Dr. F. Sarasin aus Celebes. Von A. B. Meyer und L. W. Wieglesworth. Abhandl. u. Ber. k. zool.-anthrop. Mus. Dresden, 1896-97, No. 1.]

The authors write on three new sets of birds recently

transmitted by the brothers Sarasin from Central and Southern Celebes, and the adjoining island of Bonerate between Celebes and Flores. Five new species (or subspecies) are described—*Cryptolopha sarasinorum*, *Pachycephala bonthaina*, *Melilestes celebensis meridionalis*, and *Zosterops anomala* from South Celebes, and *Oriolus boneratensis* from Bonerate. Five other species are new to the Celebean avifauna. Altogether the Drs. Sarasin have transmitted examples of 202 species from Celebes.

108. *Richmond on Birds from Madagascar.*

[Catalogue of a Collection of Birds made by Dr. W. L. Abbott in Madagascar, with Descriptions of three New Species. By Charles W. Richmond. Proc. U. S. Nat. Mus. xix. p. 677, 1897.]

Mr. Richmond describes the collection of 217 specimens of birds made by Dr. Abbott from February to July 1895 in Madagascar, mainly on the east coast, and refers them to 83 species. Of these three are new to science—*Thalassornis insularis*, *Ægialitis thoracica*, and *Copsychus inexpectatus*. *Ægialitis thoracica* has been already described (cf. Ibis, 1896, p. 578) ; the two others are now characterized.

109. *Ridgway on the Birds of the Galápagos.*

[Birds of the Galápagos Archipelago. By Robert Ridgway. Pr. U. S. Nat. Mus. xix. pp. 459-670, 1896.]

The importance of the study of the Fauna of the Galápagos has been recognized ever since Darwin brought to our notice the phenomena which it exhibits. The last account of the remarkable avifauna of the group was that published by Mr. Salvin in 1876 (Trans. Zool. Soc. vol. ix. p. 417). Mr. Ridgway now gives us a new version complete up to the present time, with the worthy object of "collating the knowledge thus far secured and of facilitating further investigations." For, as he says, it is quite certain that there is much more to be done before the bird-life of the Galápagos can be deemed so well known as to "warrant any serious attempt to solve the problems to which Darwin first called attention."

Mr. Ridgway's revised list shows us that 105 species are now known to be included in the Galápagan avifauna. These he refers to 46 genera, of which five (*Nesomimus*, *Certhidea*, *Geospiza*, *Camarhynchus*, and *Nesopelia*) are peculiar to the group. The first four of these, besides some others, are represented in many of the islands by peculiar species. Mr. Ridgway treats of all the Galápagan species one after another in a most elaborate manner, stating their specific characters, synonyms, and distribution, and adding a list of the specimens contained in the rich collection of the National Museum at Washington. Moreover, the ranges of the species are clearly shown in a series of outline maps, and a bibliography is added of previous authorities on the subject. A more carefully prepared and more complete memoir on one of the most interesting subjects in ornithology it has seldom been our pleasant task to notice.

110. *Rothschild on Guldenstädt's Redstart.*

[On Differences between Guldenstädt's Redstart and its Eastern Ally. By the Hon. Walter Rothschild. *Novitates Zoologicae*, iv. p. 167, 1897.]

Mr. Rothschild points out the differences between the true Guldenstädt's Redstart of the Caucasus (*Ruticilla erythrogastra*) and the allied species of the Himalayas and Eastern Asia, which should be called *Ruticilla grandis*, Gould.

111. *Rothschild on a new Hill-Wren.*

[Description of a new Hill-Wren from Flores. By the Hon. Walter Rothschild. *Novitates Zoologicae*, iv. p. 168, 1897.]

Pnoepyga everetti is a new species from South Flores, of which examples were obtained by Mr. Everett at elevations of from 3000 to 3580 feet. Its nearest ally is *P. rufa*, Sharpe, from Java.

112. *Salvadori on Birds from Tigre, Abyssinia.*

[Lista di Uccelli raccolti dal Dr. Muzioli nel Tigre e donati al Museo Zoologico di Perugia; con Note di Tommaso Salvadori. *Boll. Mus. Zool. ed Anat. comp. R. Univ. Torino*, xii. no. 287, 1897.]

Count Salvadori has worked out a small collection of birds

made in the Abyssinian province of Tigre by Dr. Muzioli and presented to the Muscum of Perugia. He refers them to 98 species, and gives remarks on ten of them which require special notice. Of these *Estrilda ochrogaster* (!) is a new species allied to *E. paludicola* and *E. roseicrissa*.

113. *Saville-Kent's 'Naturalist in Australia.'*

[The Naturalist in Australia. By W. Saville-Kent, F.L.S., F.Z.S., &c. Illustrated by 50 full-page Collotypes, 9 Coloured Plates by Keulemans and other Artists, and over one hundred Illustrations in the Text. Folio. London: Chapman & Hall, 1897.]

Mr. Saville-Kent's beautifully illustrated work, which is replete with information about nature in Australia, contains a special chapter on its birds, accompanied by a chromolithographic plate containing coloured figures (drawn by Keulemans) of the beautiful Finches *Poephila mirabilis* and *P. gouldi*. There are also good illustrations of some captive "More-porks" (*Podargus*), but it is asserted that the bird that cries for "more pork" in the Australian "bush" is not really a *Podargus* (as has been generally believed) but an Owl, *Ninox boobook*.

Among other places of interest Mr. Saville-Kent visited Houtmann's Abrolhos—a group of islands situated off the coast of Western Australia, and celebrated for sea-birds, guano, and corals. Of the sea-birds found there Mr. Saville-Kent reprints the list prepared by Mr. J. A. Campbell, the ornithologist of Victoria, and published in the second volume of the Reports of the Australian Association for the Advancement of Science (1890). Thirty-two species are enumerated. Those who wish to get some general idea of the chief wonders of the Australian fauna and flora will do well to refer to this work.

114. *Suchetet on Hybrids among Wild Birds.*

[Les Hybrides à l'état sauvage. Règne Animal. Tome Premier. Classe des Oiseaux. Par André Suchetet. Paris: Baillière, 1897. 1 vol. 8vo. 1002 pp.]

In this thick volume our great authority on hybridism in birds has united six articles which he has previously published on the subject * and has formed them into a homogeneous

* See our notices, 'Ibis,' 1893, 1894, and 1896.

whole. A preface of 152 pages contains a general discussion of the whole question, and concludes with a list of the many friends and correspondents who have favoured the author with advice and with the loan of specimens. An alphabetical index of memoirs and articles relating to hybridism in birds is given at the end of the work, and a large number of new additions to the knowledge of the subject which have occurred during the progress of the work are given in an Appendix. M. Suchetet's volume is indispensable to all interested in the question of hybridism in birds, and makes an excellent basis for future investigations.

115. *Winge on Birds of the Danish Lighthouses*, 1896.

[Fuglene ved de danske Fyr i 1896. 14de Aarsberetning om danske Fugle. Ved Herluf Winge. Vid. Meddel. fra d. naturh. i Kbhvn. 1897, p. 237.]

Mr. Winge's annual report on the birds met with at the Danish Lighthouses has appeared with its usual exactness and regularity *. In 1896 the Zoological Museum of Copenhagen received from 35 of the Lighthouses 1018 birds, which were referred on examination to 65 species. Of these, four (*Falco tinnunculus*, *Sturnia funerea*, *Phylloscopus superciliosus*, and *Daulias philomela*) were new to the Lighthouse list. We notice that the three species which occurred in the greatest numbers were *Erithacus rubecula* (212 specimens), *Alauda arvensis* (197), and *Turdus musicus* (185).

XLVII.—Obituary.

CHARLES BYGRAVE WHARTON, whose death we mentioned in our last number, was the second son of the late Rev. H. J. Wharton, Vicar of Mitcham, Surrey, and elder brother of the late H. T. Wharton (see 'Ibis,' 1896, p. 159). In early life he took an active interest in bird-life, and during a residence in New Zealand, where he took part in the campaign against the Maoris in 1868, he made, though he never published, many notes on ornithology. From September 1874 to May 1875 he lived in Corsica, and on his

* For last notice, see 'Ibis,' 1897, p. 137.—EDD.

return he contributed to this journal (*Ibis*, 1876, pp. 17-20) a paper containing remarks on 113 species of birds obtained or identified in that island. Thence he proceeded to Vannes, in Brittany, which he made his headquarters for exploring Belle Ile and the neighbouring islets in search of the Roseate Tern, and, though unsuccessful, he undoubtedly deserved success. Subsequently he made excursions—chiefly in spring, for he was a keen birds'-nester—to the valley of the Seine and some of the forests of Normandy, to Holland, and to the Hebrides &c. in Great Britain. At his home at Hounsdown, near Totton, Hants, on the borders of the New Forest, he continued to study birds up to the close of his life, and his garden was well stocked with nesting-boxes, at which he could observe at leisure the habits of his feathered favourites. He wrote little, but he was emphatically a field-naturalist.

XLVIII.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed “to the Editors of ‘The Ibis’”:

SIRS,—In your notice of Mrs. Blackburn’s ‘Birds from Moidart and elsewhere’ (*Ibis*, 1896, p. 263), you quote the following observations from that book:—“In the young Grey-backed Crow the eyes are blue. I do not know if it is so in the Black Carrion Crow”; and you add, “Nor do we at this moment, though we incline to think that the irides in the latter are dark.” Up to the present all the Crows I have examined have been too young at the time of their death to show the colour of the irides properly; but the other day my brother-in-law brought me the head of a well-fledged young Carrion Crow, and I can now state that the irides are bluish-grey.

Yours, &c.,

Bloxham, Oxon,
May, 1897.

O. V. APLIN.

SIRS,—An Albatross, which has since been identified as *Diomedea melanophrys*, was caught on the Streetley Hall farm, near Linton, in Cambridgeshire, on July 9th, by a labourer named Samuel Barker, who killed and took it to

Mr. S. Owen Webb, of Streetley Hall, who forwarded it, under the impression that it was a species of Gull, to Mr. Travis, taxidermist, Bury St. Edmund's, for preservation. The bird, when captured, was uninjured and in very good condition, bore no marks of captivity, but seemed simply exhausted. On hearing of it through the Rev. G. Julian Tuck, Mr. J. H. Gurney and I examined it, and asked Mr. Travis to forward it to Mr. Howard Saunders, who submitted it to Mr. Osbert Salvin, when it was pronounced to belong to the above species.

It is, I believe, the first instance of the occurrence of an Albatross in the British Isles, though a bird of the same species was shot in the Færoe Islands (Ibis, 1896, p. 136), and others are referred to by Mr. J. A. Harvie-Brown, as well as by Mr. H. L. Popham ('Zoologist,' 1894, pp. 337-338), as having been met with in that same portion of the Atlantic Ocean. In the present specimen the superciliary mark is almost absent, and is merely represented by an indistinct tinge of grey on the feathers over and in front of the eye, in which respect it seems to resemble the one killed in the Færoes. There is another peculiarity which, strange to say, is not mentioned in the British Museum Catalogue (vol. xxv. p. 447), and that is that the whole of the outer web of the outside tail-feather is white or whitish, a very conspicuous feature when the tail is spread*.

The following note was made by Mr. Gurney and myself from the specimen shortly after it was mounted:—

	Inches.
Length, following outline of mounted specimen along the back, from tip of beak to end of tail	26·3
Wing, closed, from bend to tip	17·0
Bill, along ridge to tip, following the curve	4·2
Tarsus, in front	2·4
Tarsus, behind	2·9
Expanse (<i>teste</i> Mr. Travis), about	84·0
Number of tail-feathers twelve.	

* [After this letter had been sent to press, we found that an almost identical notice had been supplied to 'The Field,' and appeared on August 28th.—EDD.]

Soft parts, as described by Mr. Travis, and so far as we could judge ourselves:—Bill pale lemon-yellow along the culmen, passing into brownish black at the bend towards the tip for about 1 inch. The extreme tip for about half an inch pale whitish horn-colour, remainder brownish orange. Legs and feet fleshy blue.

Yours, &c.,

E. A. BUTLER, Lt.-Col.

Brettenham Park, Ipswich,
25th August, 1897.

The Melodious Warbler (*Hypolais polyglotta*) in *Sussex*.—In Bulletin xlv. of the British Ornithologists' Club it was stated (see 'Ibis,' *suprà*, p. 452) that Mr. N. F. Ticehurst had exhibited a specimen of the Icterine Warbler (*Hypolais icterina*) shot at Burwash, in Sussex, and in the 'Zoologist' for last July he mentioned a second and smaller Warbler, shot at the same time and place. The description of the latter pointed strongly to *H. polyglotta*, and this the bird proved to be on examination, Mr. G. Bristow, of St. Leonard's, having obligingly sent both the specimens to Saunders for inspection. The *H. polyglotta* proved to be a male by dissection; the Icterine Warbler was a female; while, as a matter of detail, the date was April 30th, and not May 1st, which was the day the birds were received, together with various small birds shot by the same person.

The occasional visits of *H. polyglotta* to the British Islands have been suspected for some time. On May 26th, 1886, the Rev. Allan Ellison saw and heard a bird, which probably belonged to this species, in Co. Wicklow, Ireland; while during the same summer the Rev. Murray A. Mathew often watched and listened to a similar bird, which he describes in his 'Birds of Pembrokeshire,' p. 9. In 1893 an egg, which, from its small size and rich pink colour, seemed to belong to *H. polyglotta*, was sent to Saunders as one of a clutch taken near Lancing, Sussex, and there was evidence that the bird had nested there for two consecutive years, until a boy from the College went forth expressly to slay it with

a catapult, succeeded only too well, tried to skin it (for he was aware of its value), failed, and threw the mangled remains away.

The Melodious Warbler has a western range, and completely takes the place of the Icterine in Spain and Portugal, as well as in France to the west of Savoy and the Rhone valley, up to about the mouth of the Seine. Eastward the Icterine predominates, even when not the sole representative, and Tunisia seems to be the meeting-place of both species. The Melodious Warbler is not only smaller, but has a proportionately shorter wing, with an absolutely larger bastard-primary, while the second quill is shorter than the fifth, whereas the reverse is the case with *H. icterina*.—II. S.

The Production of "Aigrettes."—The demand for ladies' "aigrettes" seems to have instigated attempts to keep Egrets in captivity for the purpose of producing these much-coveted feathers. In a recent number of the 'Bulletin of the Société Nationale d'Acclimatation de France' (1896, p. 302), M. Olivier gives an account of a visit paid to an establishment near Tunis, where a number of Egrets (*Ardea garzetta*) were kept in captivity in a large enclosed aviary furnished with trees and water. They nest there, rearing two broods, in April and June, and are fed very cheaply on horseflesh, the young birds at first requiring small fishes, with which the mother feeds them. The precious side-plumes, so valued for ladies' hats, are shorn twice a year, in May and September, the best plumes being those of May. Each bird supplies about seven grammes in the year, which realize about 35 francs. This sum, after deducting expenses, gives a net gain of 22 francs per bird.

New Expedition to the Galápagos.—We learn from 'Science' that an expedition under the charge of Mr. C. M. Harris, of Augusta, Maine, has sailed from San Francisco for the Galápagos Islands, with a view to studying their fauna and flora. It is stated that the expenses are defrayed by the Hon. Walter Rothschild.

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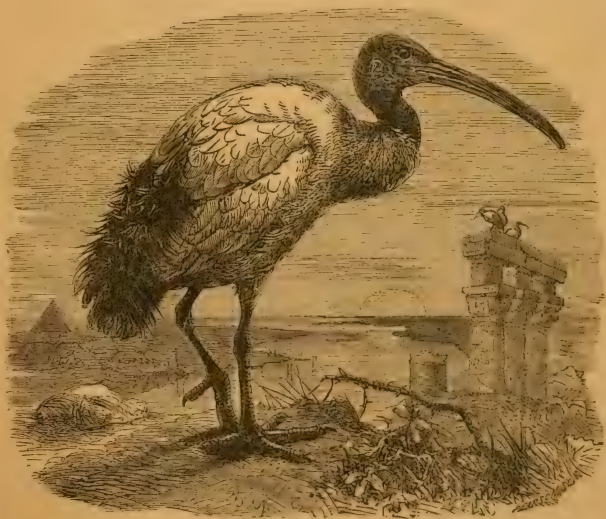
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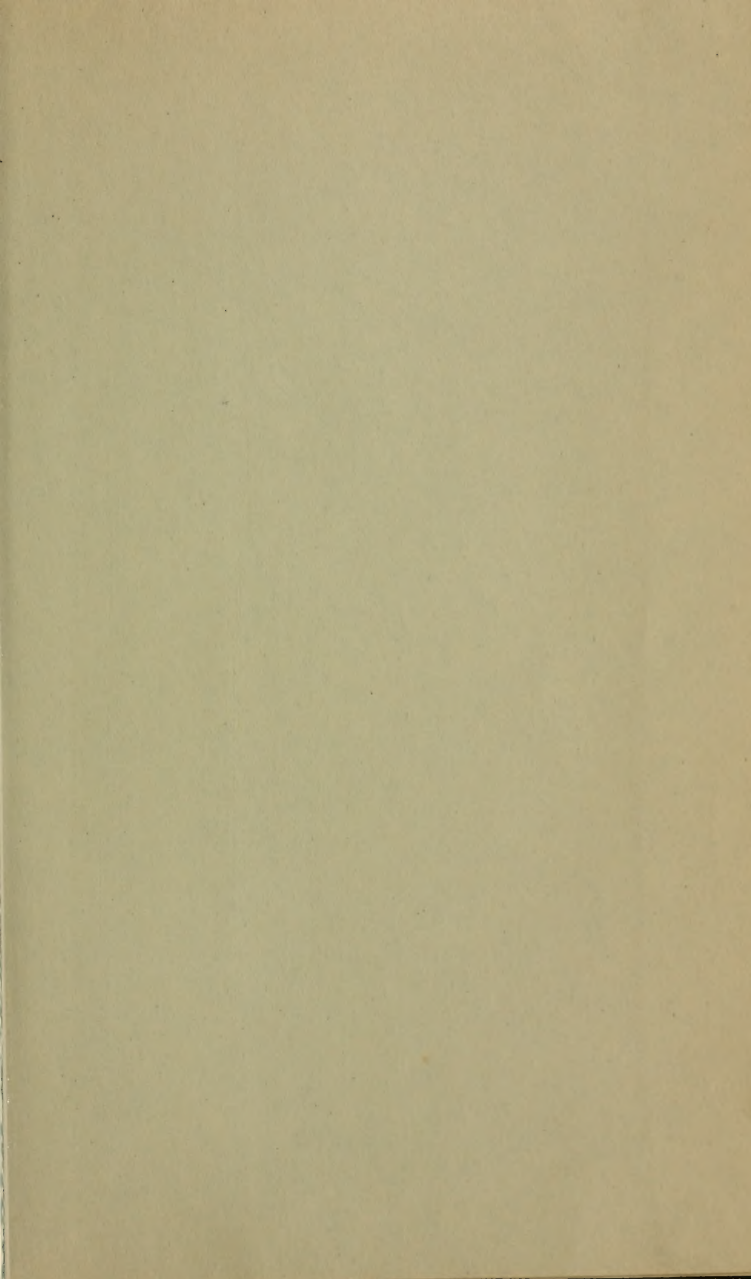
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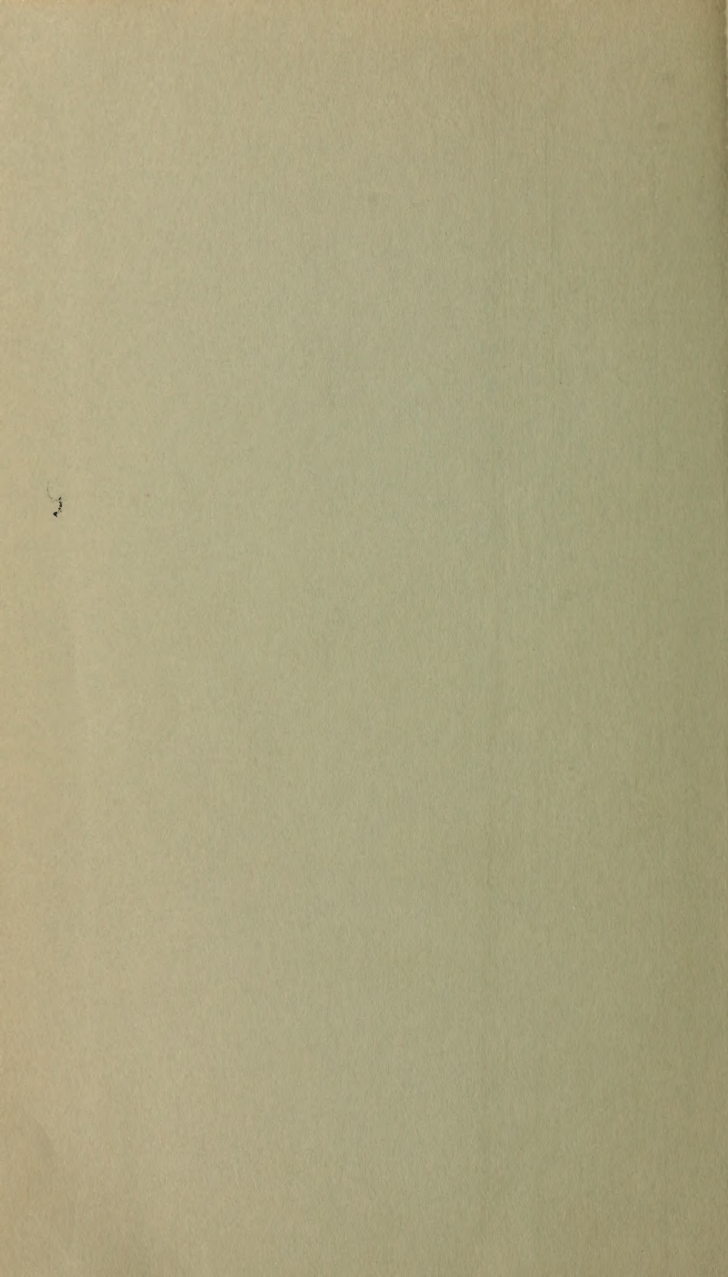
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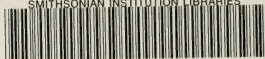








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